

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS

NEW ENGLAND CARPENTERS HEALTH
BENEFITS FUND, PIRELLI ARMSTRONG
RETIREE MEDICAL BENEFITS TRUST,
TEAMSTERS HEALTH & WELFARE FUND
OF PHILADELPHIA AND VICINITY,
PHILADELPHIA FEDERATION OF
TEACHERS HEALTH AND WELFARE FUND,
DISTRICT COUNCIL 37, AFSCME -
HEALTH & SECURITY PLAN; JUNE SWAN;
MAUREEN COWIE and BERNARD GORTER,

Plaintiffs,

v.

FIRST DATABANK, INC., a Missouri
corporation, and McKESSON CORPORATION,
a Delaware corporation,

Defendants.

Civil Action: 1:05-CV-11148-PBS

Judge Patti B. Saris

REBUTTAL EXPERT DECLARATION OF ROBERT D. WILLIG

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REBUTTAL EXPERT DECLARATION OF ROBERT D. WILLIG

May 7, 2007

I. INTRODUCTION

1. I submitted an expert report in this matter on January 24, 2007 ("January Willig Report").¹ My qualifications and experience are described in that report.²

2. Dr. Raymond S. Hartman submitted his original declaration in support of class certification on July 17, 2006. He updated that declaration on December 20, 2006 ("December Hartman Declaration"). Dr. Hartman then submitted a rebuttal declaration on March 19, 2007 ("March Hartman Declaration"). I have been asked by counsel for McKesson Corporation ("McKesson") to reply to opinions expressed by Dr. Hartman in the March Hartman

1. "Report of Robert D. Willig," January 24, 2007.

2. See the January Willig Report, ¶¶ 1-4 and Exhibit 1. In fn. 8 of Dr. Hartman's rebuttal declaration, March 19, 2007, Dr. Hartman questions my qualifications regarding issues confronting the pharmaceutical sector. While it would be easy for me to engage in similar tactics, I do not believe that it enlightens the fact finder for expert witnesses to engage in *ad hominem* attacks. Nonetheless, since Dr. Hartman has raised the question, I am providing here information detailing my pharmaceutical experience in academia, public service, and in private consulting. In academia, I have published on the economics of intellectual property settlements between branded and generic drug companies, as well as on the economic incentives associated with the types of research and development decisions made by pharmaceutical companies. While at the Department of Justice, I was involved in a number of policy and regulatory matters involving pharmaceutical and healthcare issues. In private consulting, I have been engaged by Johnson & Johnson to examine the pricing of Thebaine; Merck to analyze the effects on consumer welfare of two mergers; Bristol-Myers regarding its pricing and other business decisions with regard to Taxol; Amgen regarding damages associated with Ortho-Biotech's actions regarding Epogen; Schering-Plough regarding its patent settlements with two generic drug companies; Aventis regarding its patent settlement with Andryx; GlaxoSmithKline regarding transfer pricing issues and the role of marketing in sales of pharmaceuticals; The Clifford Chance law firm regarding the business practices of Mylan towards clorazepate and lorazepam; Par Pharmaceuticals regarding a patent settlement with a branded drug company; Bristol-Myers Squibb regarding a pharmaceutical matter; and Kos Pharmaceuticals regarding competition issues associated with a particular business decision.

Declaration.³ In Appendix B, I respond to some of Dr. Hartman's additional criticisms of my analysis contained in Attachment C of the March Hartman Declaration. My failure to address any particular claim should not be construed as agreement on my part with that claim.

Moreover, nothing in the March Hartman Declaration causes me to change the substance of any opinion that I expressed in the January Willig Report. Indeed, Dr. Hartman's analysis confirms my opinion that determination of impact and damages in this case requires an individualized analysis.

3. The conclusions that I express in this report can be summarized as follows:

- The thrust of Dr. Hartman's opinion of class-wide impact and damages is that 100 percent of the increase in AWP caused by the alleged scheme is borne by TPPs. According to Dr. Hartman, there could be no mitigation or negation of the impact of the alleged scheme for a period of over 3.5 years. This is the necessary lynch pin of his formulaic damages methodology. The realistic perspective is that the realized reimbursement rates of every potential class member were unaffected or affected differently by the AWP inflation because each potential class member's ability to respond to such inflation depended upon a significant variety of individual factors identified below and in the January Willig Report.
- Dr. Hartman's analysis relies on the flawed assumption that market responses mitigating the effects of inflation in AWP apply to general inflation in AWP, but not inflation in AWP caused by the alleged scheme. Economic theory and the empirical evidence in this case show that inflation in AWP causes increases in discounts off AWP, decreases in dispensing fees, and changes in other factors affecting realized reimbursement rates. By affecting inflation in AWP, the alleged scheme also results in changes in these factors, mitigating or completely negating impact to members of the proposed class.
- Dr. Hartman distinguishes between general inflation in AWP and inflation caused by the alleged scheme by claiming that TPPs lacked sufficient knowledge to respond to AWP inflation caused by the alleged scheme. This claim is

3. Plaintiffs have proposed two classes: (1) a TPP class consisting of TPPs whose payments on Appendix A drugs were based on AWP during the class period, and (2) individuals subject to a percentage co-payment based on AWP pursuant to a plan with a member of the TPP class during the class period. Plaintiffs' Amended Motion for Class Certification, December 20, 2006, ¶ 2. Dr. Hartman does not address the second proposed class in the March Hartman Declaration. Accordingly, in this report, I analyze impacts of the alleged scheme on TPPs. However, my analysis applies to a substantial degree to members of the second proposed class as well.

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inconsistent with the empirical evidence and contradicts economic theory. The evidence in this case indicates that a number of PBMs and TPPs had knowledge of changes in the AWP/WAC markup caused by the alleged scheme, which – according to Dr. Hartman’s own logic – means that the effects of the alleged scheme require individualized analyses. Nevertheless, as a matter of economics, market responses to inflation do not depend on the source of inflation. Therefore, market responses to AWP inflation caused by the alleged scheme do not require explicit knowledge of the alleged scheme.

- There is important variation across TPPs in at least seven dimensions – differences in (1) knowledge and sophistication, (2) size, (3) vertical integration, (4) bargaining power with respect to PBMs, (5) use of pass-through contracts, (6) consumption patterns of TPP members, and (7) pharmacy patronage patterns of TPP members. These differences generate variation in market response to AWP inflation. Therefore, determinations of impact and the extent of damages require individualized analyses.
- Dr. Hartman’s regression analysis of the time trend in discounts off AWP and dispensing fees does not prove his assertion that there was zero market response to the alleged scheme. On the contrary, his result is consistent with my position that market responses occur regardless of the source of AWP inflation. My regression analysis incorporating data on AWP inflation and WAC inflation indicates that available data are most consistent with the view that there were market responses to the alleged scheme because there are market responses to AWP inflation.
- Dr. Hartman’s formulaic methodology is seriously flawed because it ignores variation in market responses by assuming zero market response for all class members. In this way, it necessarily calculates the maximum possible impact for every class member. As a result, his methodology will find impact even when there is none and overstate any aggregate damages that do exist.

4. My conclusions are based on my experience and expertise as an economist and my review of documents and data. Appendix C is a list of additional documents and data that I have relied on in this report. If additional materials are made available to me, I may modify or update my conclusions.

5. The remainder of this report is organized as follows. In Section II, I show how Dr. Hartman’s opinion depends critically on his distinction between general inflation in AWP and inflation in AWP generated by the alleged scheme. In Section III, I discuss the flaws in Dr. Hartman’s application of economic theory to the issues in this matter. In Section IV, I show that Dr. Hartman’s regression analysis fails to prove zero market response to the alleged scheme. In

Section V, I discuss inconsistencies between Dr. Hartman's view of zero market response and others' analyses of the impact of AWP inflation. In Section VI, I show that Dr. Hartman's formulaic methodology necessarily generates an overstatement of impact and damages as a result of his zero market response assumption. Section VII is my conclusion.

II. DR. HARTMAN'S OPINION RESTS ENTIRELY ON HIS VIEW THAT INFLATION IN AWP CAUSED BY THE ALLEGED SCHEME IS DISTINCT FROM GENERAL INFLATION IN AWP

6. The necessary lynch pin to Dr. Hartman's opinion of class-wide impact and damages is his assumption that 100 % of the increase in AWP caused by the alleged scheme was borne by the TPPs. He assumes that there was zero market response for all potential class members, creating no mitigation or negation of the impact for a period of over 3.5 years. Dr. Hartman, however, concedes that general inflation in AWP, caused by "natural" market forces, leads to market responses in the form of increased discounts off AWP or decreased dispensing fees. Accordingly, at least in this respect, Dr. Hartman acknowledges the operation of economic forces as prices move toward their equilibrium levels. Where Dr. Hartman is wrong is on the non-existence of market responses to inflation caused by the alleged scheme. Here Dr. Hartman concludes that there can be no market response mitigating or negating the impact of such inflation because, according to Dr. Hartman's interpretation of the evidence, TPPs lacked

sufficient knowledge and PBMs lacked sufficient economic incentive to generate a market response to AWP inflation caused by the alleged scheme.⁴

7. Dr. Hartman provides no economic explanation for the distinction between market responses to general AWP inflation and AWP inflation caused by the alleged scheme. Indeed, economics teaches that market responses mitigating increases in AWP are more likely when the rise in AWP is artificial (*i.e.*, not associated with a rise in cost, denoted by WAC) as compared with a “natural” rise in AWP (*i.e.*, in conjunction with a rise in WAC). Dr. Hartman’s logic is the reverse. He concedes market responses occur when AWP rises with WAC, but claims zero market response when AWP rises faster than WAC due to the alleged scheme. Dr. Hartman’s fundamental error is that market responses to AWP inflation are generated by the operation of PBMs and TPPs in the market and do not depend on the source of the inflation or specific knowledge of that source. Dr. Hartman concedes that mitigating responses occur to general inflation in AWP, even without knowledge of AWP/WAC ratios on the part of TPPs.⁵ It therefore is wrong as a matter to economics to argue that somehow specific knowledge of the

4. March Hartman Declaration, ¶3. Here Dr. Hartman mischaracterizes my position as complete negation for all TPPs (“Dr. Willig incorrectly asserts that the market could negate the impact and injury arising from the Scheme”). Although my economic and empirical analysis indicate that determination of impact for any TPP requires an individual analysis, I do not claim that there are not some TPPs who may have been impacted by the alleged scheme. My position is the middle ground. Alternatively, Dr. Hartman’s formulaic model requires the extreme assumption that there is zero market response for all TPPs for a period of over 3.5 years. Dr. Hartman’s opinion is not based on sound economic analysis, but rather appears to be based on his claims that TPPs lacked knowledge of the alleged scheme and that PBM competition would not lead to any market response.

5. In his deposition, Dr. Hartman testified that TPPs do not know about AWP/WAC markups. See Hartman Deposition, October 4, 2006, p. 71-2 (“It is not my understanding – I’ve seen no evidence that there are people – third-party payors – within third-party payor claim department that are looking at WAC/AWP spreads and saying – and monitoring this like a radar screen and that they’re locked onto it.”).

alleged scheme or AWP/WAC ratios is required to generate a market response to the inflation in AWP caused by the alleged scheme.

A. **Dr. Hartman's Zero Market Response Assumption Is The Basis For His Formulaic Methodology For Proving Class-Wide Impact And Damages**

8. Dr. Hartman's formulaic impact and damages methodology rests on the flawed assumption that market responses mitigating the impact of AWP inflation fail to operate when the AWP inflation is caused by the alleged scheme. Dr. Hartman expresses his damages formula with the following simple equation.⁶

$$\text{Damages} = (1 - d) * 0.05 * \text{WAC} * Q$$

This formula rests on the assumption that discounts off AWP (d), dispensing fees (d_f) and all other factors are unaffected by the alleged scheme.

9. My approach is premised on the more realistic assumption that market forces respond to an artificial increase in price. Therefore, determination of impact and damages is an empirical question requiring a statistical analysis. Dr Hartman's approach therefore has two fundamental flaws in determining whether there has been class-wide impact and damages. First, his formulaic methodology cannot be used to test statistically whether there has been any impact. Instead, his formula necessarily assumes impact for all potential class members and necessarily overstates damages. Second, Dr. Hartman ignores the evidence of the wide variety and complexity in market responses to the inflation in AWP that would render a class-wide statistical analysis of impact and damages unreliable. To be reliable, a statistical analysis would need to account for individual TPP characteristics and market responses.

6. December Hartman Declaration, ¶¶ 21-22, and March Hartman Declaration, ¶¶ 12-24.

10. To defend his approach, Dr. Hartman devotes the March Hartman Declaration to justifying his zero market response assumption. Dr. Hartman justifies the assumption by claiming that inflation in AWP resulting from the alleged scheme is somehow different than general inflation in AWP, and therefore generates no market response mitigating the impact of AWP increases on net reimbursements.

11. According to Dr. Hartman, the alleged scheme increased the level of inflation in AWP by increasing the AWP/WAC ratio from 1.2 to 1.25 on Appendix A Drugs. Dr. Hartman characterizes the alleged scheme as follows. "The Scheme was simply and immediately effectuated whenever a relevant drug manufacturer, who previously used an AWP-to-WAC spread of 1.20, reported its new WAC to FDB. At that time, FDB merely flipped a computer switch that increased the spread to 1.25."⁷ The alleged scheme, therefore, was part of the inflation in AWP. For example, suppose inflation in WAC and AWP for a particular drug had been 5% per year when the AWP/WAC ratio was 1.2. The alleged scheme would increase inflation in AWP for that drug from 5% to 9.4% in the year of the switch in the AWP/WAC ratio from 1.2 to 1.25.⁸ In this example, 5% would be the general inflation in AWP and the additional 4.4% would be the AWP inflation caused by the alleged scheme.

12. In the March Hartman Declaration, Dr. Hartman acknowledges that market participants respond to general AWP inflation through increased discounts off AWP, decreased

7. March Hartman Declaration, ¶ 3.

8. To see this, suppose that $WAC_1 = 1.05 * WAC_0$, $AWP_0 = 1.2 WAC_0$ and $AWP_1 = 1.25 WAC_1$. Inflation in AWP is the percent change in AWP from year 0 to year 1, or $AWP_1 / AWP_0 = (1.25 * (1.05 * WAC_0)) / (1.2 * WAC_0) = 1.094$, or 9.4%. Alternatively, if the AWP/WAC ratio had remained 1.2 in year 1, then inflation in AWP would be $AWP_1 / AWP_0 = (1.2 * (1.05 * WAC_0)) / (1.2 * WAC_0) = 1.05$, or 5%.

dispensing fees, and changes in other parameters affecting the net cost of pharmaceuticals.⁹ I previously had explained that to the extent that there is additional inflation in AWP due to the alleged scheme, market responses to AWP inflation may have increased as a result of the alleged scheme.¹⁰ Dr. Hartman takes an alternative position: he argues that market participants will respond differently to a trend in AWP inflation (*e.g.*, resulting from inflation of non-Appendix A drugs; increases in WAC; etc.) vis-à-vis AWP inflation resulting from the alleged scheme. Such a position is inconsistent with sound economic logic: if market participants observe a price rise, they will react to try to lower their costs -- in this case, by seeking larger discounts, lower dispensing fees, greater rebates, greater member co-pays or other changes in parameters affecting the net cost of pharmaceuticals.

13. Moreover, Dr. Hartman's formulaic methodology does not follow the standard approach that economists use in price fixing litigation and other cases involving illegal manipulations of prices. In price fixing cases, impact and damages are generally determined through statistical estimation of the levels of prices that would have existed "but for" the alleged conspiracy. Such estimation allows for a statistical test of whether there is impact and a measure of damages that accounts for mitigating market responses. This is precisely the type of estimation that would be required if Dr. Hartman were to relax the assumption that discounts, dispensing fees and all other factors are unaffected by the alleged scheme. Instead, Dr. Hartman has developed a non-statistical formula that simply "calculates" damages without statistical estimation or testing. This non-standard approach necessarily overstates impact and damages because it assumes no mitigation through market responses. In addition, he provides no

9. March Hartman Declaration, ¶7.

10. January Willig Report, ¶49.

indication of how he would estimate changes in discounts or dispensing fees, nor how he would incorporate such estimates into his methodology. Dr. Hartman requires zero market response for his formulaic methodology to be valid.

B. Dr. Hartman Distinguishes AWP Inflation Caused By The Alleged Scheme From General Inflation In AWP On The Basis Of Market Participants' Lack Of Knowledge Of The Alleged Scheme

14. Dr. Hartman admits that general increases in AWP cause mitigating adjustments in factors such as discounts off AWP and dispensing fees, and create lower inflation in actual transaction prices (*i.e.*, realized reimbursement rates).¹¹ Given this observation, Dr. Hartman's formulaic methodology then requires an assumption that inflation in AWP caused by the alleged scheme is somehow different than general inflation in AWP. That is, if general AWP inflation causes an increase in discounts or a decrease in dispensing fees, then changes in discounts and dispensing fees are independent of the alleged scheme only if discounts and dispensing fees are somehow immune from the inflation in AWP caused by the alleged scheme. Such an assumption has no basis in economics.

15. Indeed, Dr. Berndt's analysis of PBM competition in the AWP MDL suggests that market responses to artificial inflation in the AWP (*i.e.*, not generated by cost increases) are even more likely to generate a market response than natural inflation in AWP. In particular, in criticizing Dr. Hartman's methodology in the AWP MDL, Dr. Berndt wrote in his report in the AWP MDL that PBM competition undermines class-wide impact and damages resulting from an artificial increase in AWP.

11. Dr. Hartman even admits (March Hartman Declaration, ¶6) that "[h]e (Dr. Willig) is correct in conjecturing that these other factors 'could' have so changed in response to the Scheme."

In the context of self-administered drugs, therefore, Plaintiffs' arguments and conclusions appear to be at variance with those of the FTC, and my own analysis discussed earlier in the report. If competition among PBMs is vigorous, even if the self-administered AWPIDs were artificially inflated, injury and damages to third party payors do not follow, particularly on a class-wide basis. Since lack of competition among PBMs is crucial to Plaintiffs' theory, this would appear to undermine their allegations, and certainly their assumption of class-wide injury and damages.¹²

16. Economic theory holds that if there are market responses to increases in a list price, such as AWP, through increased discounts and other adjustments, then those responses would occur regardless of the cause of the list price increases.¹³ Therefore, in order to claim that there is a real distinction between AWP inflation caused by the alleged scheme and general inflation in AWP, Dr. Hartman must find some distinguishing characteristic between the two types of AWP inflation. Knowledge of the alleged scheme is the distinguishing characteristic that he latches on to.¹⁴ He claims that if TPPs are unaware of the alleged scheme, then they will

12. Report of Independent Expert Professor Ernst R. Berndt to Judge Patti B. Saris, February 25, 2005 ("Berndt Report") In Re Pharmaceutical Industry Average Wholesale Price Litigation, MDL No. 1456 ("AWP MDL"), ¶206.

13. Dr. Hartman states (March Hartman Declaration, p. 16), "If AWP is 'artificial,' 'independent of' actual prices and should 'not enter these models,' Dr. Willig cannot appeal to increases in AWP over 1990-2005 as important determinants of the other factors affecting reimbursement." This statement is flawed from an economic perspective. AWP is an artificial price, but not invisible. The actual prices paid by market participants are net of discounts, dispensing fees, and other rebates. Any change in AWP creates offsetting changes in other factors (e.g., the discount off AWP or the dispensing fee). Therefore, it is precisely because AWP is an artificial price that one would expect increases in AWP to cause increases in the discount off AWP, decreases in the dispensing fees, increases in rebates, increases in member co-pays and changes in other parameters affecting the net reimbursement rates for drugs.

14. As I discuss below in Section III, Dr. Hartman assumes that TPPs had no knowledge of the alleged scheme. Even if he were correct (and he is not), then TPPs could not react differently to AWP inflation from the alleged scheme than they would from any other price increase. To the TPP, it is just a price increase, regardless of the source.

not react to it with mitigating market responses.¹⁵ In addition, Dr. Hartman claims that even if some PBMs were aware of the alleged scheme, they have no incentive to mitigate the impact of the alleged scheme through changes in their contractual terms with TPPs.¹⁶

17. Part of the evidence that Dr. Hartman uses to support his position of zero market response to the alleged scheme is his review of new declarations of TPPs and depositions in which individuals denied knowledge of the alleged scheme.¹⁷ Dr. Hartman, however, does not resolve precisely what is the critical knowledge that TPPs lacked. He does not appear to claim that they needed to know of the alleged scheme itself. Instead, he claims that TPPs required knowledge of the change in the AWP/WAC ratio for each Appendix A drug. The contradiction in Dr. Hartman's analysis is that he admits that market responses to general inflation in AWP occur even without TPP knowledge of the AWP/WAC ratio.¹⁸ Therefore, it makes no sense for Dr. Hartman to argue that such knowledge is necessary to generate market responses to AWP inflation caused by the alleged scheme.

18. Moreover, the evidence that I have reviewed contradicts Dr. Hartman's claims that TPPs lacked knowledge and that PBM competition failed to lead to market responses. For example, Michael Chen of ESI discusses ESI's response to the alleged scheme in 2002 in an e-

15. March Hartman Declaration, Attachment C, ¶14.

16. March Hartman Declaration, Attachment C, ¶7.

17. The "record" that Dr. Hartman reviewed includes depositions and declarations filed by McKesson showing that some PBMs knew of the change in the AWP/WAC markup, told their client TPPs and negotiated greater discounts with retailers as a result of the change in AWP/WAC markup. Dr. Hartman's interpretation of this evidence is that they do not show that any TPP knew that AWP increased because of the alleged scheme. He does not, however, argue that TPPs (or PBMs) were unaware of the increase in AWP.

18. March Hartman Declaration, ¶7 and Attachment C, ¶7.

mail to Neeraj Kanwal of ProMedica (a TPP), February 27, 2007, regarding the FDB Settlement.

Mr. Chen writes:

In 02 the industry put in a price shock, as a result we had to go out and recontract with pharmacies to get the money back to you... that is the basis for the analysis I sent you a while back. In 04 we got you rate relief in the amount of about 1.5%. That was well above the .7-.9% impact we forecasted back then of the 4% increase... Fortunately, it turned out that we did reduce the impact to Paramount in 04, most likely by squeezing the pharmacies out of the margin they previously benefited from and moving some money around too. That's why the pharmacies are refusing to accept the adjustment today. To me, the crux of this argument revolves around whether you think pharmacy pricing is an efficient market. Without PBMs it surely wouldn't be. But with PBMs I think there is enough efficiency to address the above issues (albeit not real time like the stock market). I don't think adding another price shock is the answer to this issue.¹⁹

19. Mr. Chen's e-mail illustrates a number of points that contradict Dr. Hartman's claims. First, TPPs apparently had knowledge of the increase AWP/WAC ratio in 2002.²⁰ Second, ESI responded to pressure by squeezing the excess margin out of retail pharmacies. Third, the increase in the discount to the TPP was greater than the amount of the artificial increase in AWP, suggesting retroactive compensation from the PBM to the TPP even if the change in reimbursement rates occurred later than 2002.²¹ This is precisely the type of competitive conduct that both I and Dr. Berndt expect will happen, and which Dr. Hartman denies would or did occur.

19. PROMEDICA/NEC 00004.

20. Apparently, ProMedica received the ESI April 12, 2002 memo announcing the increase in the AWP/WAC ratio. PROMEDICA/NEC 0001-0003.

21. This is one clear example of a TPP that knew about the alleged scheme and reacted. I understand that discovery in this case is ongoing. I received this evidence from ProMedica only this week. As discovery continues, more evidence like this may be available.

III. MITIGATION THROUGH A VARIETY OF MARKET RESPONSES WILL OCCUR EVEN WITHOUT TPP KNOWLEDGE OF THE ALLEGED SCHEME

20. Dr. Hartman appears to understand that unless he can explain how AWP inflation caused by the alleged scheme is somehow different than general inflation in AWP, his analysis fails. Dr. Hartman attempts to resolve this critical problem in his analysis by appealing to evidence that many TPPs were unaware of the alleged scheme. But the evidence shows that some TPPs did know of the increased AWP inflation. Moreover, Dr. Hartman acknowledges that some PBMs were aware of the increased AWP/WAC markup. Thus, even under Dr. Hartman's theory, individualized evaluations would be necessary since knowledge of the increase in AWP inflation was possessed by at least some TPPs and their agents (the PBMs).

21. More generally, Dr. Hartman's views on the relevance of knowledge are wrong as a matter of economics. In particular, markets function when there is information on prices available to some, but not all market participants. The relevant information on prices does not include underlying schemes or plans to increase prices. While that may be interesting and useful information, it is not required for economic agents to respond to changes in prices.

A. There Is Evidence That TPPs and PBMs Had Knowledge Of The AWP Inflation Caused By The Alleged Scheme

22. In the January Willig Report, I cited evidence indicating knowledge among TPPs and PBMs of the consequences of the alleged scheme early in the class period. For example, in addition to the ProMedica information above, ESI e-mails in March and April 2002 indicated awareness of the increases in AWP/WAC markup. ESI then prepared a memorandum, dated April 5, 2002, explaining the unusual increases in AWP.²² The occurrence and extent of

22. See January Willig Report, ¶¶ 68-72.

dissemination of this information to TPPs is a factual dispute, which, based on the evidence I have seen, points toward dissemination of such information. The importance here for purposes of determining class-wide impact is that Dr. Hartman's damages methodology depends on the outcome of this factual dispute. His methodology fails if there is knowledge among TPPs of an artificial increase in AWP. Moreover, as I explain below, TPP knowledge of the change in the AWP/WAC mark up from the alleged scheme is not necessary to generate a market response.

23. In addition, Dr. Hartman does not dispute that Caremark and ESI are PBMs that had knowledge of the increase in the AWP/WAC ratio. Again, his methodology fails if these PBMs in any way responded to this information by granting pricing concessions to some TPPs. The problem for Dr. Hartman is that he cannot show class-wide harm on the basis of uniform TPP ignorance, since evidence has been presented that some TPPs had knowledge of the AWP inflation caused by the alleged scheme. Similarly, he cannot simply assert that no PBM would use its knowledge of the alleged scheme – which I have documented – as part of its competitive negotiations with pharmacies and/or TPPs. The extent of information possessed by PBMs and TPPs, as well as the nature of their response to that information, requires individualized analysis of the data and factual record.

B. Dr. Hartman is Confused about the Relevance of Knowledge

24. Dr. Hartman states incorrectly, "Dr. Willig incorrectly assumes a model of perfect transparency for this market."²³ I make no such assumption. Instead, Dr. Hartman assumes that there can never be any market response to the alleged scheme for any class member at any time during the class period of over 3.5 years. That is the extreme and incorrect assumption. Indeed,

23. March Hartman Declaration, ¶4.

as noted above, some TPPs had knowledge of the consequences of alleged scheme: Determining which TPPs had such knowledge requires individualized analysis.

25. More importantly, knowledge of the alleged scheme is unnecessary to generate a market response to the alleged scheme. Since individual TPPs respond to inflation in AWP by seeking various changes in contract terms (e.g., greater discounts off AWP, lower dispensing fees or changes in other factors affecting actual reimbursement rates), then it is not necessary for the TPPs to know about the alleged scheme – they simply need to observe higher prices.²⁴ In fact, they may simply need to observe a greater willingness among those entities they are bargaining with (PBMs and retail pharmacies) to provide concessions. As presented in detail in the January Willig Report, the actual prices paid by putative class members did not change in unison in reaction to the alleged scheme. Individualized inquiries are needed to ascertain whether different TPPs' actual prices changed at all, and if so by how much.

C. Economics Teaches that Individuals Need Not Have Complete Knowledge of Causes of Price Changes in order for Markets to Adjust to those Price Changes

26. Dr. Hartman states, "Indeed, unlike the AWP case, there is no need to examine whether numerous governmental reports, press stories, congressional hearing and the like transmitted knowledge to market place."²⁵ Why not? If knowledge of changes in AWP is transmitted to the marketplace, resulting in market adjustments to mitigate the impact of

24. See, for example, Declaration of William J. Einhorn of the Teamsters, March 15, 2007, ¶4 ("While THWF was aware of an increase in overall expenditures for prescription drugs, we were unaware of an increase in the WAC-AWP ratio in 2002.")

25. March Hartman Declaration, p. 2.

increases in AWP, then there is likely to be mitigation of the impact of the alleged scheme, a possibility that Dr. Hartman cannot admit without a complete collapse of his methodology.

27. Dr. Hartman sets up a “straw man” by stating, “...FDB’s pricing practices and procedures had to be sufficiently transparent (indeed, *perfectly transparent*) to render the 5% Scheme evident to the preponderance of relevant competitive entities *almost immediately* and competition among PBMs had to be *sufficiently perfect* to compete away the impact of the Scheme on the Class-member payors through immediate contract renegotiations.”²⁶ It is not necessary to have any transparency of FDB’s pricing practices. All that is necessary is information on AWP available to some (but not all market participants) -- prices that FDB actually publishes.

28. In economics, market actors respond to information about prices. Not all market actors have perfect information. And none need to know the underlying causes of a particular change in price (*e.g.*, the alleged scheme). There are a number of economic examples showing that specific knowledge of underlying causes is unnecessary to generate a market response to the resulting price increase. Take price fixing (an analogy used by Dr. Hartman) for example. A price fixing scheme may break down due to competition from other firms or industries, even if no one knows about the scheme. The competitive process may just shift demand away from the price fixers because of their higher prices.

26. March Hartman Declaration, ¶3. Dr. Hartman’s discussion here is aimed at his claim that there would be an immediate class-wide impact. My analysis of the evidence shows that even when market responses occur throughout the class period determination of impact for each TPP requires an individualized analysis. The reason for this is that market responses can more than offset the impact of the increase in AWP on Appendix A drugs. This occurs because market responses apply to both Appendix A drugs and non-Appendix A drugs (*i.e.*, drugs that did not have an increase in the AWP/WAC mark up). Furthermore, as I discuss in ¶¶18-19, there is evidence of retroactive market responses in which PBMs granted pricing concessions in return for losses incurred at an earlier time.

D. There Are A Number Of Market Responses Mitigating Increases in AWP

29. Dr. Hartman's position is that there was no market response to AWP increases stemming from the alleged scheme because TPPs were unaware of the alleged scheme. According to Dr. Hartman, the assumption of no market response implies class-wide impact from the alleged scheme for a period of over 3.5 years. This is an extreme position that has no basis in economic theory or the empirical evidence. In the January Willig Report, I showed both that there would be a market response and that the market response would differ across TPPs. It is important to note that I do not claim that there was no impact or damages from the alleged scheme. My position is only that determination of impact and damages is an empirical question requiring an individualized analysis. That is, while Dr. Hartman takes the extreme position that there is zero market response for all class members for a period of over 3.5 years, I take a middle-ground position that there may have been some harm to some TPPs, but that determination of impact and damages for any individual plaintiff is an empirical question requiring an individualized analysis conducted on a TPP-by-TPP basis.

30. As I showed in the January Willig Report, significant differences exist among market participants in how they reacted to changes in AWP inflation.²⁷ Some TPPs sought and obtained larger discounts off AWP.²⁸ Others obtained lower dispensing fees.²⁹ Still others

27. See, for example, Young Exhibit 12, PBM Contracting and Pricing, from the AWP MDL summarizes the changes over time in proposed and contract pricing for named plaintiffs in the AWP MDL, other TPPs and PBMs. The data contained in the exhibit illustrate the variety in contract terms and the changes over time in discounts off, dispensing fees, and rebate pass-through percentages.

28. For example, District Council 37 Health & Security Plan ("DC 37"), [REDACTED] and [REDACTED] all negotiated for larger discounts and lower dispensing fees during the class period. See January Willig Report, ¶48.

29. Id.

sought changes in other contract and plan terms.³⁰ The timing associated with when these changes were made varies for each market participant.³¹ While Dr. Hartman is correct that statistical methods can be used to analyze class issues, his formulaic methodology does not account for and incorporate individual variation, and he provides no indication of how he would attempt to do so. Nothing about his analysis does anything to incorporate individual variation in the speed, size, or nature of reaction to price inflation.

31. In the January Willig Report, I identified at least six ways in which TPPs mitigate the impact of increases in AWP. These changes in contractual and non-contractual terms with PBMs and TPP members have the effect of reducing the realized reimbursement payments made by TPPs and therefore mitigate increases in AWP regardless of whether those increases result from the alleged scheme or from general inflation in AWP. Some or all of these market responses arise for each TPP.³² The precise mix of the market responses depends on individual TPP characteristics. In particular, the first four market responses listed – discount off AWP, dispensing fee, rebate pass-through percentage and risk-sharing terms – are all market responses in which the TPP mitigates through PBM concessions. Alternatively, the market responses through co-pay terms and plan design are ways in which a TPP shifts some of the burden of

30. For example, Teamsters Health & Welfare Fund of Philadelphia (“Teamsters”), DC 37, New England Carpenters, and Blue Cross Blue Shield of Montana (“BCBS Montana”) all increased member co-pays during the class period. See January Willig Report, ¶96.

31. For example, the increases in discounts mentioned above in the spring of 2003 (DC 37), July 1, 2003 [REDACTED] and January 1, 2002 [REDACTED]. See January Willig Report, ¶48.

32. In the January Willig Report, I cited William J. Einhorn’s (Teamsters) testimony regarding the TPPs’ trade off between various pricing terms within the PBM contract (¶ 96). For example, as Dr. Berndt noted (¶159), TPPs’ choice of pricing concession through discounts off AWP versus rebate pass-through percentages reflect differences in the TPP willing to bear risk.

increasing AWP on its members. A TPP's leverage with respect to PBMs will determine whether it mitigates primarily through concessions from the PBM or through shifting the burden on the TPP members. The six types of market responses that I identified are:

i. Discount off AWP

32. The discount off AWP is the contractual term found in most TPP/PBM contracts and PBM/retail pharmacy contracts. The discount is expressed as a percentage of the AWP.³³

ii. Dispensing Fee and Other Fees

33. Contracts between TPPs and PBMs specify fees including dispensing fees, formulary management fees and other PBM charges. These are typically added to the discounted AWP.³⁴

iii. Rebate Pass-Through Percentage

34. PBMs earn rebates from manufacturers in return for placing certain drugs on formularies. PBMs do not necessarily retain 100 percent of the rebates earned. Instead, as part of their contracts with TPPs, they negotiate a percentage of the rebates earned to be passed through to the TPP, further reducing the net reimbursement.³⁵

iv. Risk-Sharing Terms

35. TPP/PBM contracts often contain terms that mitigate the impact of AWP inflation on net reimbursement rates.³⁶

33. January Willig Report, ¶¶48-50, 80-82.

34. January Willig Report, ¶83.

35. January Willig Report, ¶¶84-86.

36. January Willig Report, ¶¶87-89.

v. **Co-Pay Terms and Plan Design**

36. A TPP may mitigate the impact of AWP inflation through increases in co-pays paid by its members or changes in plan design, creating more tiers of preferred drugs.³⁷ Unlike other market responses, this form of mitigation does not require concessions on the part of PBMs. Instead, these responses result in a sharing of the burden of AWP inflation with the TPP members.

vi. **Reduced Growth in WAC**

37. Drug manufacturers may choose to slow the planned increases in WAC in an effort to offset AWP increases related to the alleged scheme.³⁸ This type of market response will slow AWP inflation itself and therefore may reduce the need for market responses mitigating the impact of AWP inflation.

F. **Variation In TPP Characteristics**

38. Dr. Hartman's methodology depends on a uniform response from TPPs to the alleged scheme. Dr. Hartman's uniform response is zero response for all class members for a period of over 3.5 years. Rather than addressing the evidence I provided in the January Willig Report on TPP variation, Dr. Hartman relies on his observation that the TPPs are uniform in their lack of specific knowledge of the alleged scheme as support for his factual conclusion of a uniform zero response to the alleged scheme.³⁹ A conclusion that all TPPs lacked knowledge of

37. January Willig Report, ¶¶93-99.

38. January Willig Report, ¶¶101-104.

39. The named plaintiffs provided depositions and written affidavits detailing their lack of knowledge of the alleged scheme. Dr. Hartman summarized some of this material in March Hartman Declaration, Attachment D. Dr. Hartman apparently infers from these that all TPPs had similar lack of knowledge of the alleged scheme. The evidence that I have reviewed does not support that inference.

the alleged scheme ignores the evidence that TPPs exhibit vast differences in key characteristics leading to variation in their market responses to the alleged scheme (even without specific knowledge of the alleged scheme itself). The principle dimensions of variation in TPP characteristics that I identified in the January Willig Report are listed below. These characteristics are not independent of each other. For example, the degree of vertical integration and a TPP's size are likely correlated with knowledge and sophistication.

i. Knowledge and Sophistication

39. Many TPPs are employers or unions, who pay for the prescription drug benefit offered to their employees and members. These types of TPPs generally do not have sophisticated knowledge of the pharmaceutical drug market and rely on PBM competition to obtain lower prices for their employees and members. The Teamsters Health & Welfare Fund of Philadelphia ("Teamsters"), a named plaintiff in this litigation, is an example of this type of TPP. The Teamsters has only 25,500 participants and beneficiaries. See Table 1. The administrator of the Teamsters, William J. Einhorn, testified in the AWP MDL that he believed, until sometime in 2000 or 2001 that the AWP was the actual average of the prices charged to pharmacies or mail order facilities by the drug wholesaler or manufacturer. It was not until someone billed the Teamsters for a drug at a price less than AWP that he began to realize that AWP was a list price and not a price anyone paid.⁴⁰

40. In contrast, many TPPs are insurance companies, which specialize in the provision of health care benefits. It is their business to be knowledgeable of the specifics of the health care industry in an effort to provide the lowest prices to their customers, employers, unions, and individuals. To do this, they spend time and resources examining market trends and

40. AWP MDL Deposition of William J. Einhorn, February 25, 2004, pp. 119-23.

conducting research on the health care markets. Blue Cross Blue Shield of Montana ("BCBS Montana") is an example of this type of TPP. BCBS Montana has been providing health insurance coverage for its members in Montana since the 1940s. It has about 220,000 covered lives and about 120,000 lives that generate approximately 1,000,000 prescriptions a year.⁴¹ BCBS of Montana contracts with PBMs, but it also does its own research of drug price trends and member utilization. BCBS Montana has been using Express Scripts as its PBM since 2001.⁴² On April 22, 2002, Express Scripts sent a letter to Tina Wong and Dr. Roy Arnold of BCBS Montana informing it of FDB's change in the AWP/WAC ratio for some drugs.⁴³ In addition, Tina Wong testified that BCBS Montana made changes to member co-pay levels in response to increases in drug prices.⁴⁴

41. Select Health, a TPP deposed in this lawsuit, is owned by a large health system and has approximately 460,000 lives covered by their pharmacy benefit package. Eric Cannon, from Select Health, testified to the large amounts of research it does on AWP and overall drug trends:

We track national trends; we track our own internal trends; we track utilization mix; we track inflation values for particular products, particular drug classes. We look at contracting trends across the country, and from that I mean our people contracting on an AWP-minus basis, what types of dispensing fees do they use. We track -- we've been tracking the recent changes with the federal government in reimbursement of injectable drugs as it relates to ASP pricing; we track, to a lesser degree, trends related to WAC, and that's simply because our payment methodologies are based off of AWP. We do collect rebates on some items based on WAC, but we do not track that very closely.⁴⁵

41. Deposition of Tina Wong, BCBS of Montana, November 14, 2006, ("Wong (BCBSMT) Deposition"), pp. 52-3.

42. Wong (BCBSMT) Deposition, p. 16.

43. ESI-414-00003677-8.

44. Wong (BCBSMT) Deposition, pp. 72-3.

45. Deposition of Eric Cannon, Select Health, October 11, 2006, ("Cannon (Select Health) Deposition"), p. 11.

The health care organization that owns Select Health also owns 23 retail pharmacies and Eric Cannon testified that Select Health uses information from these 23 retail pharmacies to make sure they are getting the best and lowest drug prices for their members. Mr. Cannon testified,

Select Health is in a unique position, in that Intermountain Health Care, of which we are a part of, owns and manages 23 retail pharmacies. Those discussions, on a regular basis, are with the pharmacy director or pharmacy manager for those 23 retail stores, and they are more – I wouldn't call them formal discussions – they would probably be more considered a discussion topic over lunch. Is there room to decrease reimbursement, or they may say, gee, if we have to accept another contract at this rate, we're not going to make any money.⁴⁶

42. [REDACTED] is a TPP based in Connecticut and the Northeast that provides health benefits to employers and individuals and, according to their website, has 240,000 members.⁴⁷ According to ESI documents, [REDACTED], [REDACTED] Director of Pharmacy, learned of the alleged scheme prior to April 2002 from an AstraZeneca representative. He was contacting ESI, in part, to determine how the change in FDB pricing policy was going to affect [REDACTED] drug trend.⁴⁸

43. Humana is a one of the largest health insurers in the United States. It had over 11 million insureds and had revenues of \$21.4 billion in 2006.⁴⁹ Humana operates its own PBM, it does its own contracting with drug manufacturers, it has its own P&T committee that sets the Humana formularies, it contracts directly with pharmacies and it purchases pricing data from FDB and Medi-Span.⁵⁰

46. Cannon (Select Health) Deposition, p. 23.

47. [REDACTED], accessed April, 24, 2007.

48. E-mail from Chris Macinski to Stuart L. Bascomb and Beth Wingate, March 22, 2002. (ESI-414-00001760)

49. Humana 2006 Annual Report.

50. Deposition of William Fleming, Humana, November 9, 2006, ("Fleming (Humana) Deposition"), pp. 12, 35.

44. These examples come only from those TPPs who have been involved in this litigation, either as named plaintiffs, deponents, or through third part discovery. However, within this small sample, there very different levels of knowledge. At one extreme, a TPP's administrator did not know enough about pharmaceutical pricing to understand that AWP is a list price and at the other end of the extreme, a TPP's Director of Pharmacy learned about the alleged scheme through discussions with drug company representatives only a few months after the alleged scheme supposedly began. This shows vastly different capacities for knowledge and sophistication in responding to changes in drug prices and highlights the impossibility of Dr. Hartman's model, which relies on zero knowledge for all TPPs.

ii. Size

45. Table 1 shows that there is also large variation in the size of TPPs just within the small sample of TPPs for which I have information through discovery in this case. Pirelli Armstrong Retiree Medical Benefits and Trust ("Pirelli") has only 2,000 members, while BCBS of Montana has 220,000 members. Both of these TPPs contract with PBMs, however Pirelli is not likely to be able to extract the same price discounts as BCBS of Montana simply because it cannot promise a PBM as much business volume. Humana, which is a vertically integrated TPP and PBM, has 11 million members. Humana contracts directly with pharmacies and is much more likely than either Pirelli or BCBS of Montana to extract better prices from pharmacies and better rebates from manufacturers because Humana is able to promise a greater volume of business. These differences in size create issues that must be evaluated on an individual basis.

iii. Vertical Integration

46. Vertical integration in PBM and pharmacy functions also affects sophistication, knowledge and leverage. Table 1 illustrates the large variation in vertical integration just among the named plaintiffs and other TPPs for which I have information. There are TPPs that are

employers and unions who contract with health insurance companies or directly with PBMs for their pharmacy benefits. There are insurance companies who provide fully insured products to employers and unions who contract with PBMs. Then there are some TPPs that are insurance companies that vertically integrate into various PBM functions. By conducting the PBM work in-house, these organizations are highly sophisticated, developing their own formularies, tracking their own drug utilization, contracting directly with pharmacies, and also possibly with drug manufacturers for rebates. Select Health and Humana are both examples of TPPs on Table 1 that are vertically integrated into PBM functions. These TPPs are highly sophisticated. Eric Cannon, the Director of Pharmacy Services at Select Health, details the research that Select Health performs on drug trends and the steps it takes to mitigate drug inflation.⁵¹ As mentioned earlier, Eric Cannon also testified that he routinely has conversations with the pharmacies owned by Select Health's parent company about pricing. This type of knowledge is going to create different individual issues for each TPP.

47. Yet another way in which TPPs can vertically integrate is into the PEM function of providing mail order pharmacy services. These TPPs are actual pharmacies that purchase drugs from manufacturers and who would have benefited from the alleged scheme. Recent deposition testimony shows that Aetna, a large TPP that is vertically integrated into PBM functions, was negotiating contracts with McKesson.⁵² In these negotiations, Aetna told McKesson that its margin was the difference between what Aetna would pay McKesson for drugs and what Aetna would receive from its members, which was reimbursement based on AWP minus a discount.⁵³ Aetna was asking McKesson for different contract arrangements that

51. Cannon (Select Health) Deposition, p. 11.

52. Deposition of David Charles Silko, McKesson, April 13, 2007, pp. 32-4, 55-6.

53. Id.

might increase its margin. Therefore, Aetna is an example of a TPP that may have benefited from the alleged scheme.⁵⁴ Dr. Hartman's model is incapable of handling this type of individual issue.

iv. Pass-Through Contracts

48. As I explained in the January Willig Report, some TPPs get the direct benefit of PBM negotiation with retail pharmacies through pass-through contracts. For example from 2002 through August 2005, the Teamsters contracted with General Prescription Programs ("GPP") for its PBM services.⁵⁵ The contract with GPP was a pass-through contract, which means the Teamsters paid whatever contract rate GPP was able to negotiate with pharmacies. The Teamsters' representative, William J. Einhorn, describes the contract as follows: "Our arrangement with GPP was that we were billed at whatever price GPP paid its member pharmacies for prescription drugs. GPP negotiated prices on brand name drugs by using percentage discounts from AWP. Thus THWF had no set discount off AWP."⁵⁶ Therefore, the impact of the alleged scheme on the Teamsters depends entirely on the timing of GPP's contracts and GPP's ability to negotiate deeper discounts after the start of the Alleged Scheme. If GPP knew about the alleged scheme and demanded increased discounts from pharmacies or was able to increase discounts through competition, the Teamsters may not have been impacted by the alleged scheme. The existence of pass-through contracts means that some TPPs would receive

54. Id.

55. Declaration of William J. Einhorn, March 15, 2007, ¶5.

56. Id.

automatic and immediate relief from the AWP inflation caused by the alleged scheme once the PBM obtains pricing concessions squeezing the increased margins from retail pharmacies.⁵⁷

v. PBM Relationships

49. The number of PBM bidders for a TPP's business and the power of incumbent PBM affect each TPP's leverage in its negotiations with PBMs. For example, Tina Wong testified that BCBS Montana had an RFP in 2002 and received 20 responses from PBMs. BCBS then narrowed the choices down to three PBMs (Argus, Anthem and ESI) before ultimately picking ESI.⁵⁸ In the January Willig Report, I discuss PBM competition and the RFPs conducted by New England Carpenters ("Carpenters"), Philadelphia Federation of Teachers Health and Welfare Fund ("Teachers") and District Council 37 ("DC 37") during the class period.⁵⁹ In 2001, Carpenters RFP was sent to nine PBMs and seven of those responded with proposals.⁶⁰ The 2004 RFP conducted by DC 37 was initially sent to fifteen PBMs. Eight of those PBMs responded to the survey and of those eight, six PBMs were initially considered.⁶¹

vi. NDC Consumption Patterns

50. I showed in the January Willig Report, that Dr. Hartman's conclusion that all Appendix A drugs would have had an AWP/WAC markup at 1.2 for the full 3.5 year class

57. For example, any TPP with a pass-through contract with ESI would have obtained immediate changes in contract terms as ESI squeeze retail pharmacies. See Chen e-mail, PROMEDICA/NEC 00004.

58. Wong Deposition, pp. 33-34.

59. January Willig Report, ¶45.

60. Deposition of James W. Buckley, Jr., New England Carpenters, October 20, 2006 and November 7, 2006 ("Buckley (NEC) Deposition"), Exhibit 13.

61. Deposition of Rosaria Esperon, DC37, November 6, 2006 ("Esperon (DC37) Deposition"), Exhibit 59.

period is inconsistent with the evidence of markup changes occurring prior to the class period.⁶² In addition, Dr. Hartman admits that not all Appendix A drugs experienced an increase in their AWP markup to 1.25 at the same time.⁶³ These two observations indicate that there would be variation across NDCs within Appendix A in the timing of artificial inflation in AWP resulting from the alleged scheme. This variation results in variation in market responses and impact across TPPs to the extent that TPPs differ in the consumption patterns of their members.

vii. Pharmacy Patronage Patterns

51. Just as TPP leverage vis-à-vis PBMs varies, retail pharmacies' leverage relative to PBMs varies with factors such as the size of the retail pharmacy. PBM's ability to squeeze excess profit from retail pharmacies in turn affects the level of excess profit available to be shared between the PBM and the TPP. Consequently, market responses and the impact of the alleged scheme will differ depending on which pharmacies are patronized by TPP members.

52. In summary, TPPs vary in many respects and behave in very different ways with different incentives. The problem with Dr. Hartman's damages model is that it lumps these vastly different TPPs into a class, which dramatically oversimplifies the real world and, of even greater concern, overstates actual damages.

IV. DR. HARTMAN'S REGRESSION ANALYSIS IS SERIOUSLY FLAWED BECAUSE IT DOES NOT SUPPORT HIS ASSUMPTIONS

53. Dr. Hartman supports his assumption to keep discounts and dispensing fees "constant" in his formulaic damages methodology based in part on a regression analysis of trends in AWP discounts and dispensing fees before and during the class period (August 1, 2001 - March 15,

62. January Willig Report, ¶29.

63. December Hartman Declaration, Figure 1.

2005).⁶⁴ Dr. Hartman's regression analysis simply estimates the time trend in discounts and dispensing fees in two separate regressions. He then relies on the time trend he finds to conclude that the alleged scheme did not cause an increase in discounts or a decline in dispensing fees. This is not based on any statistical test, but rather on his observation that the time trend appears to fit well both before and during the class period. Dr. Hartman's result does not support his assumption that there was zero market response to the alleged scheme. On the contrary, his result is consistent with my position that market responses such as changes in discounts off AWP and dispensing fees occur regardless of the source of AWP inflation. That is, because AWP has been growing over time, the time trend that Dr. Hartman finds could simply be capturing market responses to AWP inflation. Hence, to prove his point, Dr. Hartman would need to show in his regression analysis that it is actually the time trend itself, rather than inflation in AWP over time, that explains changes in discounts and dispensing fees.

54. I specified an econometric model that includes AWP inflation, and evaluates whether AWP inflation or a simple time trend better explains changes in discounts and dispensing fees. In addition, I evaluate whether overall AWP inflation or only general inflation in AWP, measured by WAC inflation, does a better job explaining changes in discounts and dispensing fees. The results of these comparisons show that overall AWP inflation does a better job than either a simple time trend or WAC inflation.

64. Dr. Hartman states (March Hartman Declaration, ¶7) that he does not hold discount, dispensing fee and other factors constant. Instead, what he assumes is that these factors change due to normal market forces but not because of the "5% Scheme," and therefore he holds those factors constant between his "but-for" and actual scenarios in his damages formula.

55. There are a number of fundamental errors in Dr. Hartman's analysis. First, as I have shown, there are at least six factors that can change for any TPP as a market response to the alleged scheme, not just discount and dispensing fee. Dr. Hartman's analysis addresses only two of those factors, discount off AWP and dispensing fee. As a result, his analysis could not, even if it were valid, show zero market response to the alleged scheme since his analysis fails to account for the majority of the factors that can change.

56. Second, Dr. Hartman's regressions only show that discounts off AWP are increasing over time and dispensing fees are declining over time. I do not deny this, and in fact it is entirely consistent with the positions laid out in the January Willig Report. My position is that discounts and dispensing fees react to changes in AWP. So, since AWP has increased over time, my position actually predicts the time trend in discounts and dispensing fees that Dr. Hartman shows.

57. The real challenge is to understand whether this time trend in discounts and dispensing fees is better explained by changes in AWP or some other time-varying factor. That is, time itself is not what causes increases in discounts and dispensing fees. Time is a proxy for some other factor that affects discounts and dispensing fees. Dr. Hartman does not attempt to determine what the other factor is that is generating the time trend in discounts and dispensing fees in his model. The obvious "other factor" to consider is AWP inflation. By not including a measure of AWP, Dr. Hartman's model suffers from an omitted variable bias.⁶⁵ Dr. Hartman is attributing to time the changes in discounts and dispensing fees rather than identifying the true cause of those changes. The analysis needs to incorporate AWP into the regressions to look for

65. See Robert S. Pindyck and Daniel L. Rubinfeld, *Econometric Model & Economic Forecasts*, 2nd Edition, 1981, pp. 128-130, for discussion of biased estimates of coefficients when there is an omitted variable correlated with other independent variables in the regression.

evidence of whether changes in discounts and dispensing fees move with AWP, or whether the time trend is driven by some factor other than AWP.

58. I have constructed an econometric model that incorporates the impact of AWP inflation. It shows a significant market response to AWP inflation and allows me to evaluate whether the increases in discounts and decreases in dispensing fees are better explained by AWP inflation or by a simple time trend (as Dr. Hartman believes).

59. Using data on AWP inflation for branded prescription drugs reported in the ESI *Drug Trend Report* for the period 1998 through 2004,⁶⁶ I estimate the impact of AWP growth and a time trend on growth in the average payment percentage based on the average discount off AWP (d) and the dispensing fee (df).⁶⁷ The model I estimate pools the PBMI data on retail and mail order average discounts and dispensing fees for the period 1997 through 2004.⁶⁸ I then estimate the changes in the average payment percentage as a function of growth in AWP, a time

66. *Express Scripts 1999 Drug Trend Report, Express Scripts 2000 Drug Trend Report, Express Scripts 2001 Drug Trend Report, Express Scripts 2002 Drug Trend Report, Express Scripts 2003 Drug Trend Report, Express Scripts 2004 Drug Trend Report.* Because the ESI *Drug Trend Report* reports annual AWP inflation beginning in the 1999 Drug Trend Report (measuring the percentage growth in AWP during 1998), I am able to run the regression analysis using an index for AWP beginning in 1997 with a value of 100 in 1997.

67. I incorporate the discount off AWP and the dispensing fee in a single equation in recognition of their combined role (along with other unobserved factors) in mitigating growth in AWP. To do this I begin with the basic formula for reimbursement (AA) based on AWP, discount off AWP (d) and the dispensing fee (df).

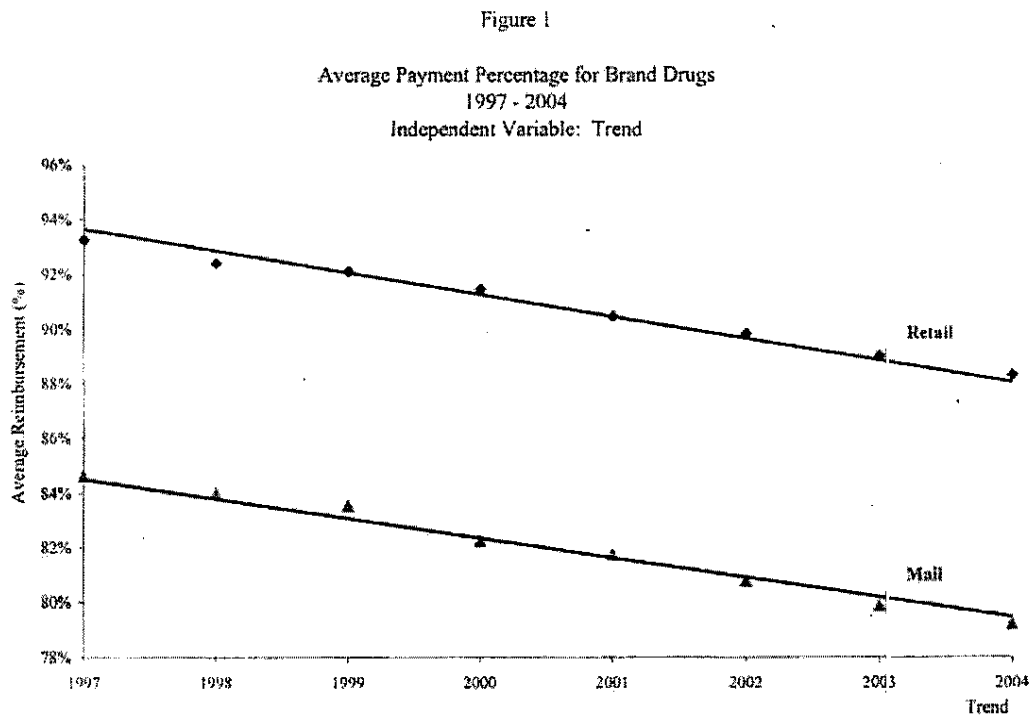
$$AA = (1 - d) * AWP + df = AWP * C$$

where $C = (1 - d) + df / AWP$ is the average payment percentage based on the discount off AWP (d) and the dispensing fee (df).

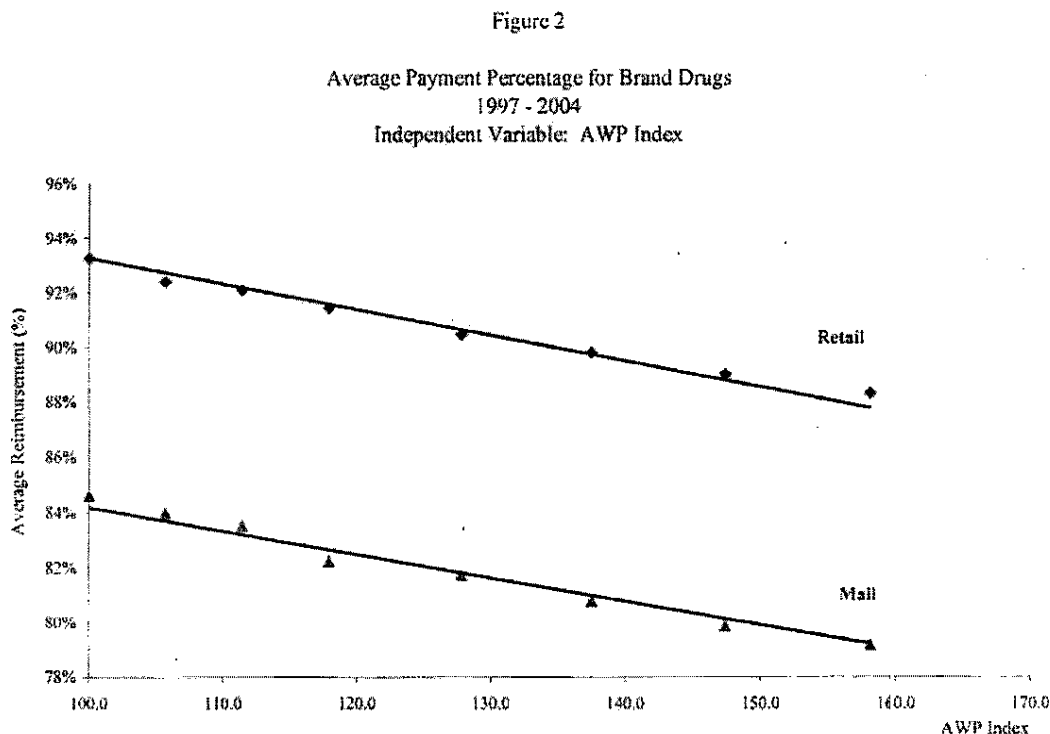
68. The Prescription Drug Benefit Cost and Plan Design Survey Report (2005), p. 4.

trend and a dummy variable indicating mail order. Detailed explanations of the construction of the data and the results of the estimation are contained in Appendix D.

60. Figures 1 and 2 illustrate the problem with Dr. Hartman's analysis. Figure 1 shows the relationship between the average payment percentage (expressed as a percentage of AWP) and time. The data indicate that the average payment percentage of AWP has decreased over time. This is essentially what Dr. Hartman has shown. Figure 2 shows why this is the case. In Figure 2, I map out the relationship between the average payment percentage and the AWP index. This shows the tight relationship between increasing discounts, declining dispensing fees, and growth in AWP.



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61. The key question, then, is whether time itself or AWP growth does a better job explaining the decrease in the average payment percentage. Dr. Hartman's theory is that discounts and dispensing fees are simply in a process of changing over time. My view is that these changes are driven by inflation in AWP. A standard econometric measure shows that once we account for the growth in AWP, adding a time trend does nothing to improve the model. This indicates that the time trend that Dr. Hartman found was likely standing in for the effect of AWP inflation. Consequently, Dr. Hartman's conclusion that discounts simply grow over time and are not influenced by inflation in AWP is not supported by the data.

62. I also use this model to evaluate Dr. Hartman's position that discounts and dispensing fees respond to general inflation, but not to the additional inflation in AWP caused by the alleged scheme. If Dr. Hartman were correct, then it would be expected that general inflation in AWP (measured by inflation in WAC) would do a better job of explaining changes in discounts and dispensing fees than would overall inflation in AWP, which includes both general

inflation and the AWP inflation caused by the alleged scheme. I check this by evaluating whether WAC inflation does a better job of explaining changes in discounts and dispensing fees than does AWP inflation. WAC inflation is a measure of the general inflation in AWP, without the added inflation resulting from the impact on the ratio between WAC and AWP from the alleged scheme. In contrast, AWP inflation captures both the inflation in WAC and the effect of changes in the AWP/WAC ratio due to the alleged scheme.

63. To compare these alternatives, I constructed a measure of average WAC growth using FDB data on WAC and weights based on McKesson sales during the class period.⁶⁹ I then utilized a measure similar to that used to analyze the relative importance of AWP and time to compare the regression based on WAC inflation with the regression based on AWP inflation. The results indicate that although AWP inflation and WAC inflation are highly correlated with each other, AWP inflation again does a better job explaining the decline in the average payment percentage. This finding contradicts Dr. Hartman's position that discounts and dispensing fees respond to general inflation in AWP, but not to inflation in AWP caused by the alleged scheme.

64. These econometric results are consistent with the conclusion that there were market responses to the alleged scheme because there are market responses to AWP inflation. To the extent that the alleged scheme caused increased growth in AWP, it caused responses that mitigated the impact of growth in AWP.

69. The same FDB data and McKesson data can be used to construct AWP inflation. I ran my regression analysis using this measure of AWP inflation and generated results that were similar to the regression results using the ESI data on AWP inflation.

V. DR. HARTMAN'S POSITION CONTRADICTS DR. BERNDT, PLAINTIFFS' EXPERT HAYES AND HIS OWN DECLARATION ON THE FDB SETTLEMENT

65. Dr. Hartman's discussion of PBMs reflects a further flaw in his view of economic theory. Even if TPPs were unaware of the alleged scheme, sophisticated firms such as PBMs were more likely to become aware of the alleged scheme or the associated increase in the AWP/WAC markup. And, in fact, as I showed in the January Willig Report, there were PBMs that were aware of the alleged scheme. Knowledge by the PBMs of increased AWP, or increased AWP/WAC ratios, is sufficient to generate mitigating market responses for some TPPs.⁷⁰ Dr. Hartman states, "[Dr. Willig] offers no factual evidence that any PBM[s] knew of the Scheme until it had been ongoing for some period of time." (p. 2) This is a revealing statement. Dr. Hartman apparently admits that at some point after the alleged scheme began at least some PBMs knew of it and therefore could respond to it.⁷¹

66. More importantly, like TPPs, PBMs did not need to know of the alleged scheme in order to respond to it. PBMs adjust contractual and non-contractual parameters in response to inflation in AWP.⁷² Therefore, it is illogical and empirically invalid to assume that the alleged scheme is distinguished or needs to be distinguished from general AWP inflation and that PBMs will somehow react differently to one type of AWP inflation versus another.

70. January Willig Report, ¶¶41-47.

71. Since damages should appropriately be measured over the entire class period, it would be essential in a sound analysis to incorporate when the PBMs reacted to the inflation in AWP caused by the alleged scheme. Dr. Hartman's analysis does not do that and incorporation of that knowledge would require individualized analyses.

72. See Madsen (Caremark) Declaration, ¶3, ("In approximately the last quarter of 2002, I learned from someone in Caremark's finance department that the spreads on a large number of brand name drugs increased from 20% to 25%. These increased spreads were one of the factors I considered in negotiating Caremark's contracts with pharmacies.")

67. Dr. Hartman claims that some PBMs benefit from the increased AWP resulting from the alleged scheme in their capacity as mail order pharmacies.⁷³ However, he continues to argue that PBMs would not have passed any of the benefits on to TPPs. Dr. Hartman's position is at odds with the opinions expressed by Dr. Berndt in his report for the AWP MDL class certification. In particular, Dr. Berndt held that competition among PBMs would mitigate the impact of increases in AWP on TPPs.⁷⁴ Dr. Hartman spells out his criticism of Dr. Berndt's position on PBM competition when he states, "[o]f course they [PBMs] compete; but the competition is constrained by their own profit-maximizing interests."⁷⁵ As Dr. Berndt explained in his AWP MDL report (and I explained in the January Willig Report), competition among PBMs for the business of TPPs means that some of the increased profit to PBMs from an artificial increase in AWP will flow back to TPPs.⁷⁶ Dr. Hartman criticizes Dr. Berndt and me on the question of PBM competition by arguing that PBM competition is imperfect.⁷⁷

73. For example, Dr. Hartman states, "[i]t is interesting to note that not only would retailers benefit but so would mail order pharmacies. Many PBMs own their own mail order facilities and would benefit from increases in the AWP when contracts were not renegotiated with their TPPs, a clear incentive for PBMs to not inform their clients of the Scheme." March Hartman Declaration at fn 11.

74. Berndt Report at ¶ 206.

75. March Hartman Declaration, Attachment C, fn 10. Moreover, Dr. Hartman's analysis fails to address the automatic response that results from pass-through contracts between PBMs and TPPs. See, for example, Declaration of William J. Einhorn, ¶5 on the Teamsters' pass-through contract with General Prescription Programs (2002-05).

76. Berndt Report at ¶206. January Willig Report, ¶¶41-47.

77. March Hartman Declaration, at Attachment C, fn. 10. This criticism by Dr. Hartman is invalid – neither Dr. Berndt nor I claim that PBM competition is perfect. Indeed, it is precisely the imperfection of PBM competition that leads to the need for individualized analyses of the market responses to the alleged scheme.

68. Dr. Berndt's and my position is that PBMs and TPPs need not know of the alleged scheme (even if some do), but instead they respond to varying degrees to the increased inflation in AWP in any number of ways including increasing discounts off AWP, lowering dispensing fees, increasing the rebate pass-through rate, or altering plan design. The exact method and extent of the response depends critically on the choices available to each TPP. If a TPP has a number of choices among PBMs, then the market response is more likely to be rapid and extensive. Alternatively, if a TPP by reason of size or contract or location faces little PBM competition, then its market response may be slower and less extensive. It is these differences, among others, that generate the need for individualized analyses of impact.

69. Dr. Hartman's view also contradicts plaintiffs' expert Susan Hayes, a long-time drug industry consultant. She appears to believe that observed increases in discounts off AWP were caused by the increase in the AWP/WAC ratio. She recognized that discounts off AWP have increased over time and attributes this increase to the change in the AWP/WAC ratio. In particular, Ms. Hayes testified in her deposition as follows.

Q: Can you think of any other reason why the discounts have gotten larger over time other than the fact that the cost of drugs went up?

A: Well, I think now looking back on it, I think it was because the spread between WAC and AWP has increased.

Q: Because of the allegations in the complaint?

A: Yes.⁷⁸

78. Deposition of Susan Hayes, October 26, 2006, p. 221. As I noted in the January Willig Report, I understand that plaintiffs withdrew Ms. Hayes as their expert after her deposition. Dr. Hartman does not respond to the views of Ms. Hayes in the March Hartman Declaration.

70. Dr. Hartman's position even contradicts his own analysis of the anticipated market response to the FDB settlement. In his declaration in support of the FDB settlement, Dr. Hartman stated that responses to the settlement will be "developed by individual market participants."⁷⁹ Thus Dr. Hartman acknowledges that market responses to a change in the AWP/WAC ratio will vary across TPPs. In this case, he simply assumes away such variation by claiming that there was zero market response to the initial increase in the AWP/WAC ratio because the alleged scheme was not publicized. Thus, Dr. Hartman's position of zero market response, in his view, seems to depend critically on his position that TPPs had no knowledge of the alleged scheme. However, the record shows that TPPs to varying degrees had knowledge of the artificial increase in AWP and responded to it in varying degrees.

71. In the end, Dr. Hartman's opinion is that while discounts off AWP, dispensing fees and other factors affecting realized reimbursement rates have been changing over time, they have not changed in response to the alleged scheme.⁸⁰ This is a position that is not supported by economic theory. Dr. Hartman relies on the belief that TPPs did not know of the alleged scheme and therefore were unable to mitigate its impact at all for a period of over 3.5 years. The view of no knowledge and no mitigation is a fact question (not a matter of economic theory). Dr. Hartman claims incorrectly that the evidence in this case supports his extreme position.

79. Declaration of Raymond S. Hartman: Impact and Cost Savings of *The First DataBank Settlement Agreement*, October 4, 2006, fn 19.

80. March Hartman Declaration, ¶¶7, 8, 13.

VI. DR. HARTMAN'S FORMULAIC METHODOLOGY MEASURES THE MAXIMUM POSSIBLE IMPACT FOR EACH POTENTIAL CLASS MEMBER.

72. I have shown that Dr. Hartman's formulaic methodology is seriously flawed because it depends critically on his assumption of zero market response to the alleged scheme for all TPPs for a period of over 3.5 years. This assumption makes no economic sense and is contradicted by the empirical evidence of an assortment of market responses to AWP inflation. In this section, I address a further implication of Dr. Hartman's zero market response assumption on his formulaic methodology – the methodology finds impact for each TPP even if there is no impact and it will result in an overstatement of the true damages.⁸¹ Dr. Hartman is simply wrong when he claims that his methodology measures the average aggregate damages. Instead, his model necessarily results in an upwardly biased measure of aggregate damages. For this reason, Dr. Hartman's formulaic methodology provides no basis for determining true impact and damages.

A. Dr. Hartman's Formulaic Methodology Assumes Discounts And Dispensing Fees (And All Other Factors) Are Unaffected By The Alleged Scheme

73. Dr. Hartman explains his formulaic methodology in ¶14 of the March Hartman Declaration and ¶¶18-22 of the December Hartman Declaration. The key assumption underlying Dr. Hartman's assumption is that the two factors, discount off AWP (d) and dispensing fee (df) are unaffected by the alleged scheme.⁸² At first blush this may seem like an innocuous

81. See Appendix E for the algebraic and numerical analysis of Dr. Hartman's formulaic methodology.

82. Dr. Hartman ignores all other factors affecting net reimbursement, which is equivalent to two implicit assumptions: (1) all other factors are unaffected by the alleged scheme, and (2) all other factors are additive, rather than multiplicative, in the net reimbursement formula.

assumption, but this assumption generates an impact and damages formula that is biased upward -- it will necessarily find impact for every class member even if there is no impact and it will generate an overstatement of damages. The simple reason for this is that the model cannot account for mitigating responses to AWP inflation through increased discounts (d), decreased dispensing fees (df) or changes in other variables (rebates, co-pays, etc.) not included in the model.

74. Dr. Hartman's damages formula is overly simplistic and can be measured using observed data on discounts, WAC and the volume of sales for each Appendix A drug. It is of central importance to recognize that if his assumption of zero market response for a period of over 3.5 years is wrong, then the correct damages formula is no longer simple. If there is market response, as I have shown, the model has to determine the appropriate "but-for" values for discounts and dispensing fees. This necessarily involves complex estimation of the values of those variables for each class member that would have existed absent the alleged scheme, or alternatively the level of the net reimbursement for each class member that would have existed absent the alleged scheme.

B. Dr. Hartman Calculates the Maximum Impact Rather than the Average Impact

75. By assuming that the discount off AWP, dispensing fee and all other market responses are independent of the alleged scheme, Dr. Hartman generates a greatly simplified damages formula that relies on observed variables (actual discounts, WAC and volume (Q)) and that necessarily overstates damages and automatically finds impact for all class members even if there is none. The correct approach to the empirical problem raised by recognition of market responses to the alleged scheme is to design a framework for testing for and estimating the net

effect on actual reimbursements. Dr. Hartman instead chooses to calculate the maximum impact (rather than estimate the true impact) of the added inflation in AWP.

76. To see how Dr. Hartman estimates the maximum impact rather than the true (or even average) impact, consider the following logic. If any TPP responded to higher AWP, it would have done so by obtaining an increased discount off AWP or in other ways reducing its reimbursement rate. So, there are two effects. First, there is an increase in reimbursement from the increased AWP, holding all other parameters fixed. Second, there is a decrease in reimbursement resulting from increased discounts, decreased dispensing fees or other reactions. Dr. Hartman's formula calculates the first effect, but ignores the second effect. By just ignoring the reimbursement decrease, he generates the maximum possible damages.

77. Moreover, ignoring the second effect is why Dr. Hartman's methodology misses all the individual variation among putative class members. That is, even if he is right that the first effect (the increase in AWP) can be computed on a class-wide basis, the second effect (the response in discounts and other factors) varies from individual to individual, depending on the nature, size, and speed of their reaction. As I showed above and in the January Willig Report, the nature, size, and speed of these reactions differ significantly across TPPs.

78. The finding of impact even when there is none is not simply a hypothetical possibility. I have demonstrated in the context of a simple example, using reasonable values of the changes in discounts, dispensing fees and co-pays, that true damages can be zero for any particular TPP. In the March Hartman Declaration, Dr. Hartman used a hypothetical example where a drug's AWP of \$96 increased to \$100 as a result of the alleged scheme.⁸³ In his example, the average discount increased from 13.9% to 14.5% while the dispensing fee

83. March Hartman Declaration, Att C, ¶28.

decreased from \$2.21 to \$2.04. Although Dr. Hartman contends that these changes in discount and dispensing fee were independent of the alleged scheme, he calculated the net increase in the payments to be \$2.67 under the assumption that the changes in discount and dispensing fee were caused by the alleged scheme. See Table 2.⁸⁴

79. There are several problems with this hypothetical example. First, this example does not accurately reflect what Dr. Hartman's formulaic methodology would calculate for the impact on the hypothetical TPP. In Dr. Hartman's formula, there is no change in the discount or dispensing fee. The "but-for" and actual discount would be 14.5%, while the "but-for" and actual dispensing fee would be \$2.04. The resulting estimate of impact would be \$3.42. Consequently, if there is market adjustment for a particular TPP, Dr. Hartman's formula would overestimate impact, calculating a \$3.42 increase in TPP payments when the true value would be \$2.67.

80. The second problem with Dr. Hartman's hypothetical example is that it does not take into account other factors that could be changing simultaneously with discounts and dispensing fees. For example, suppose the member co-pays increased from \$17 to \$18 as a result of AWP inflation caused by the alleged scheme.⁸⁵ Accounting for this change would reduce the net impact to \$1.67 because there would be an additional savings of one dollar for the TPP.

81. Finally, Dr. Hartman's formulaic methodology does not recognize that any market responses would apply to both Appendix A drugs and to non-Appendix A drugs. In Table 2, I calculate the offsetting impact of the market responses applied to a non-Appendix A drug. This results in a decrease in the TPP's payment of -\$1.77. Because non-Appendix A drugs account for

84. The detail for all of the calculations in Table 2 are included in Appendix E.

approximately half of the dollar-volume of drugs, the decrease in the TPP's reimbursement payments for non-Appendix A drugs means that the TPP will actually experience a decrease of \$0.10 in its overall reimbursements.

82. The bottom line is that Dr. Hartman's model, in this example, would generate \$3.42 of impact, when the actual impact for this TPP was zero (or even less than zero). This example demonstrates that Dr. Hartman's formulaic methodology does not provide an economically meaningful framework for determining class-wide impact and damages.

VII. CONCLUSION

83. Dr. Hartman's formulaic methodology depends critically on his assumption of zero market response to the increase in AWP caused by the alleged scheme for all TPPs for a period of over 3.5 years. He bases this assumption on his position that AWP inflation caused by the alleged scheme can be distinguished from general inflation in AWP. According to Dr. Hartman, general inflation in AWP generates mitigating market responses, while the inflation caused by the alleged scheme generates zero market response because TPPs lacked knowledge of the alleged scheme and PBMs had no incentive to grant mitigating concessions.

84. In this report and in the January Willig Report, I have shown that there is no basis in economics or in the empirical evidence to support Dr. Hartman's extreme position on a class-wide basis. Instead, the evidence shows that the market responses for TPP's are varied, complex and certainly non-zero. As a result, determination of impact for each TPP and calculation of true aggregate damages requires an individualized analysis.

(...continued)

85. As I showed in Table 5 of the January Willig Report, member co-pays increased approximately two dollars per year during this time period, so the hypothetical example of a one dollar increase in member co-pays is a reasonable assumption.

85. Dr. Hartman has provided no framework for such an analysis because his formulaic methodology does not recognize the likelihood of market responses. The implication of this error is that implementation of Dr. Hartman's methodology would necessarily find impact for every class member even if there is none, and would necessarily overstate the true aggregate damages. Therefore, my expert opinion is that Dr. Hartman has provided no basis for concluding that there was class-wide impact or damages from the alleged scheme. Moreover, Dr. Hartman has provided no basis for concluding that class-wide impact could be established by means of common evidence – instead it remains clear that individualized analyses would be necessary to ascertain whether the members of the proposed class suffered impact as a result of the alleged scheme.

I declare under penalty of perjury that the foregoing is true and correct. Executed this 7th day of May, 2007, in Princeton, New Jersey.

Robert Willy

Table 1
Known Pharmaceutical Market Functions Performed by Various TPPs

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	BCBS of Montana		DC 37	Harvard Pilgrim	Humana	Aetna Direct Health Care	New England Carpenters	Prillif		Select Health	Teachers	Teachers
Total Members	220,000	240,000	350,000	970,000	11,000,000	In House	9,000	2,000	Caremark	In House	40,000	25,500
PBM During Class Period	ESI	ESI	NPA, ESI	MedImpact	In House	In House	Advance PCS, Medco	Caremark	Caremark	In House	NPA, ESI	GPP
Pharmacy Services												
Formulary Creation / Maintenance												
Negotiation with Pharmacies / Network Creation												
Rebate Negotiations with Manufacturers												
Insurance Network Provider												
Third Party Payer												
Union												
Employer / Former Employer												

Sources:

- (1) Tina Wong Deposition, November 14, 2006, pp. 27, 51, 53, 63, 64.
 (2) Email from Ericette Noelle to Stuart L. Raconis, Sue Reinher and Pamela Roberts, March 19, 2007. (ESI-114-00001794).
 (3) Declaration of Barbara Epstein, Administrator of the Health and Security Plan of District Counsel 37, in Support of Plaintiff's Motion for Class Certification, March 19, 2007.
 (4) James Kenney Deposition, October 11, 2006, pp. 7, 13-12, 40-41, 44.
 (5) William Fleming Deposition, November 9, 2006, pp. 12, 13, 14, 56-57, 59, 101.
 (6) Carol Sidwell Deposition, September 17, 2004, pp. 8-9, 17, 20-22.
 (7) Declaration of James W. Buckles, Director of the New England Carpenters Health Benefit Fund, in Support of Plaintiff's Motion for Class Certification, March 19, 2007. The Second Amended Complaint states New England Carpenters has 22,000 members. I relied on the number number given in the Declaration.
 (8) Declaration of Carl Kymour in Support of Plaintiff's Reply Brief in Support of Their Motion for Class Certification, March 19, 2007.
 (9) CMK-AWP 013177-290, CMK-AWP 013201-7.
 (10) Eric Canino Deposition, October 11, 2006, pp. 10, 14-16, 20, 23.
 (11) Declaration of Arthur Steinberg, Administrator of the Philadelphia Federation of Teachers Health and Welfare Fund, in Support of Plaintiff's Motion for Class Certification, March 15, 2007. The Second Amended Complaint states Teachers has 22,000 employees. I relied on the number number from the Steinberg Declaration.
 (12) Declaration of William J. Ehlhorn, March 19, 2007. The Second Amended Complaint states that Teachers has 28,000 employees. I relied on number from the Ehlhorn Declaration.

Note: This table may be incomplete in that it may not include all of the functions of every TPP. This table shows the functions I was able to confirm with the discovery information available to me.

Table 2: A Closer Look at Dr. Hartman's Hypothetical Example

Examples	Before Alleged Scheme ("But-For") Values					After Alleged Scheme (Actual) Values					
	AWP	Discount off AWP	Dispensing Fee	Co-Pay	Net TPP Payment	AWP	Discount off AWP	Dispensing Fee	Co-Pay	Net TPP Payment	Net TPP Impact
Dr. Hartman's Model (Zero Market Response)	\$96	14.5%	\$2.04		\$84.12	\$100	14.5%	\$2.04		\$87.54	\$3.42
Dr. Hartman's Partial Market Response	\$96	13.9%	\$2.21		\$84.87	\$100	14.5%	\$2.04		\$87.54	\$2.67
Market Response including Co-Pay Response	\$96	13.9%	\$2.21	\$17.00	\$67.87	\$100	14.5%	\$2.04	\$18.00	\$69.54	\$1.67
Market Response including Co-Pay Response applied to non-Appendix A drugs	\$96	13.9%	\$2.21	\$17.00	\$67.87	\$96	14.5%	\$2.04	\$18.00	\$66.12	-\$1.75
Net Impact Accounting for Non-Appendix A Drugs											-\$0.08

Note: Net impact accounting for Non-Appendix A Drugs assumes 50% of prescription dollar volume is Appendix A.

APPENDIX A

Appendix A: Responses to Dr. Hartman's Criticisms Listed in Attachment C

1. Dr. Hartman lists a number of additional criticisms in Attachment C of the March Hartman Declaration. None of the criticisms is correct and in general they reflect fundamental flaws in Dr. Hartman's analysis: It is wrong as a matter of economics and the evidence in this case to conclude that there is no market response by any market participant to the alleged scheme. Accordingly, determination of impact and damages requires an individualized statistical analysis of each TPP's response to the increased AWP inflation resulting from the alleged scheme. I now address each of the criticisms contained in Attachment C.

A. Role Of Cost (Att C, ¶1)

2. Dr. Hartman states (Att C, ¶1) that "[t]he costs that are the basis for the competitive market results to which he [Dr. Willig] appeals are marginal or variable costs of production." Dr. Hartman is confused here. He is referring to the manufacturers' costs when he discusses which costs are variable. Manufacturers' costs have nothing to do with the allegations in this case. TPPs face certain costs, including the reimbursement rates they must pay for drugs. The question here is what happens if there is an attempted increase in those costs through an artificial increase in AWP. Do market responses through increased discounts off AWP, decreased dispensing fees or changes in other factors to mitigate or negate the impact on reimbursement rates that result from the artificial increase in AWP? This market response has nothing to do with manufacturers' costs.

B. Role Of Demand (Att C, ¶2)

3. Dr. Hartman claims that demand for branded innovator drugs is price inelastic. He then claims that, "demand responses cannot be relied upon to discipline price increases." (Att C, ¶2) As a matter of economics, this is wrong. Market responses mitigating conspiratorial price increases can occur even when product demand is relatively inelastic. Inelastic demand

does not mean there are no substitutes for a product. More importantly, the observation that demand for innovator drugs is inelastic is irrelevant to this case. The question here is whether demand facing a particular PBM for its services is elastic. If a PBM faces elastic demand for its services, then its client TPPs have choices and can demand price concessions in the face of AWP inflation. Alternatively, a PBM with inelastic demand vis-à-vis a particular set of TPPs may not need to grant price concessions as a result of AWP inflation. It is such differences across TPPs and their PBMs that lead to the need for individualized analyses of whether and to what extent there is impact from the alleged scheme. Elasticity of demand for a particular drug has nothing to do with this question.

C. Role of Competition (Att C, ¶3)

4. Dr Hartman claims (Att C, ¶3) that “[c]ompetition in the markets relevant here is not workable in the same way that it is in other markets, where consumers and producers make decisions for themselves, without ‘mediation’ by third parties. When such mediation occurs, an ‘agency’ problem or a ‘principal-agent’ problem can arise.” Dr. Hartman considers the TPP to be the “principal” and the PBM to be the “agent.” Dr. Hartman’s point is that the PBM does not always have the incentive to benefit the TPP when negotiating reimbursement rates. In Dr. Hartman’s words the result is “competitive motives and behaviors are blunted.” (Att C, ¶3) Dr. Hartman’s opinion directly contradicts Dr. Berndt’s analysis of PBM competition. Dr. Berndt found that PBM’s do engage in vigorous competition. Further, Dr. Berndt states that if competition is vigorous among PBMs, artificial inflation in AWP would not cause harm to third party payors.¹ Dr. Hartman’s error is that the possibility of such blunting of the competitive motives of some PBMs in their dealings with some TPPs is another element that generates the need for individualized analyses in this case. PBMs compete imperfectly for client TPPs. Some

1. Berndt Report at ¶206.

TPPs have more leverage than others to obtain favorable terms through their PBMs. Such differences can be expected to lead to differing market responses to the alleged scheme, and therefore to the need for individualized analyses of the impact and damages resulting from the alleged scheme.

D. Diffusion of Information (Att C, ¶¶4-7)

5. As I discussed above in Section III, Dr. Hartman is wrong in his discussion of the relevance of information. He believes that TPPs' lack of knowledge of the alleged scheme or of the AWP/WAC markup implies that there could not have been a market response to the alleged scheme for a period of over 3.5 years (August 1, 2001 – March 15, 2005). Dr. Hartman's discussion reflects a fundamental misunderstanding of the role of information in markets. As I have shown, factors such as discounts off AWP and dispensing fees change in response to inflation in AWP. Since the alleged scheme causes inflation in AWP, market responses will occur even if it were assumed that no one ever knew about the alleged scheme (an assumption that is contradicted by the evidence in this case and Dr. Hartman's assertion that retailers benefited from the alleged scheme). All that is necessary to generate a market response is the general availability to market participants of information on AWP. It is undisputed that such information is available through databases such as FDB. Moreover, differences among TPPs in access to this information lead to differences in the timing and extent of the market responses to

the alleged scheme.² This is why the imperfect information argument that Dr. Hartman advocates actually supports my finding that this case requires individualized analyses to determine impact and damages.

E. Response To The FDB Settlement (Att C, ¶¶8-9)

6. Here Dr. Hartman repeats his criticism of my analysis from his ¶4c by citing a partial quote from the January Willig Report. Dr. Hartman quotes the sentence from ¶40 of my report, "There is no economically meaningful reason why the character of the dynamics of the responses to the [*FDB Settlement Agreement*] would differ significantly from responses to the AWP/WAC ratio change." The full quote including the sentences before and after the quoted sentence reads as follows (I highlight in bold the sentence Dr. Hartman quotes out of context):

"I interpret Dr. Hartman's comments as follows. He believes that there is inertia that would prevent market participants from adjusting to a change in the AWP/WAC ratio, but that this inertia depends on individual market participants' responses as they 'assess their strategic alternatives, observe the strategies of other market participants and ultimately implement their consequential strategies.' In other words, market responses depend on individual issues. **There is no economically meaningful reason why the character of the dynamics of the responses to the settlement would differ significantly from responses to the AWP/WAC ratio change.** If the responses to the settlement are, in Dr. Hartman's words, 'developed by individual market participants,' he is simply acknowledging the point of this subsection: responses to the AWP/WAC ratio change will be determined individually by TPPs and thus, any reliable analysis of impact must be done on an individuated basis."

7. My discussion in this passage relates to Dr. Hartman's acknowledgement that the market responses to the change in the AWP/WAC ratio resulting from the FDB Settlement will

2. For example, while the named plaintiffs in this case have filed affidavits saying they were unaware of the alleged scheme, I pointed out in the January Willig Report that [REDACTED], the Director of Pharmacy at [REDACTED] (a TPP), heard from the Arizona representative of First DataBank sometime before March 2002 that "First Data Bank has adjusted AWP's". January Willig Report, ¶71. The email I cite in ¶71 of the January Willig Report also states that [REDACTED] had also heard about the alleged scheme from "more than one pharma company" by March 2002 as well. Clearly, TPPs are not alike in their access to and use of information.

differ across TPPs. My point was simply that there is no reason in economics why the market response to the initial change in the AWP/WAC ratio from the alleged scheme will be uniformly zero (as Dr. Hartman assumes), while the market response to the second change in the AWP/WAC ratio (from the FDB Settlement) will vary across TPPs (as Dr. Hartman acknowledges). I simply point out that Dr. Hartman's view of the market response to the FDB Settlement is inconsistent with his assumption of zero market response to the alleged scheme.

F. Comparative Statics (Att C, ¶¶10-2)

8. Dr. Hartman criticizes my discussion of the appropriate economic analysis of the alleged scheme by arguing that reimbursement rates for self-administered drugs were not in equilibrium prior to implementation of the alleged scheme, that fundamental variables such as demand, cost and competition have little impact on reimbursement rates and that offsetting changes in discounts and rebate pass-through percentages have been going on for decades. Dr. Hartman mischaracterizes my analysis, and his arguments actually support the conclusion that determination of impact and damages requires individualized analyses.

9. First, I did not claim that all markets at all times are in equilibrium. Instead, I pointed out that Dr. Hartman's maintained assumption that there would be no market response to the alleged scheme for a period of over 3.5 years makes no economic sense. The concepts of comparative statics and equilibrium shed light on how markets respond to a disruption in variables such as the AWP. The change in AWP caused by the alleged scheme does not involve a change in the fundamental elements or variables such as cost, demand and competition. Economics teaches that such a change causes changes in other factors. Indeed, Dr. Hartman admits that these offsetting changes occur all the time due to "natural market factors." Yet he

holds to his error of presuming his unsupported claim that inflation in AWP resulting from the alleged scheme is somehow different than general inflation in AWP.

10. Second, Dr. Hartman mischaracterizes my opinion by asserting that I believe that there must be an immediate response to the alleged scheme that completely negates its impact on actual reimbursement rates. In addition, Dr. Hartman takes the extreme position that there was zero response to the alleged scheme for a period of over 3.5 years for all potential class members. My opinion is the middle ground: There may have been some impact for some TPPs. However, economic theory and the empirical evidence show that the market responds to changes in AWP through changes in a variety of other variables. Determining the impact for each TPP requires an individualized analysis. Dr. Hartman, contrary to economic theory and the empirical evidence, assumes away any market response. As a result, Dr. Hartman devises a damages model that generates the maximum possible damages for each TPP. It is only Dr. Hartman's presumption of no market response for each TPP that leads to the view that there was impact on each TPP. Instead, the evidence and economic theory agree that market responses likely occurred, depending on the varying characteristics and situations of the TPPs. Therefore determining the impact on each TPP requires an individualized analysis.

G. Implication Of Governmental Intervention (Att C, ¶13)

11. Dr. Hartman claims that the *OIG Compliance Program Guidance for Pharmaceutical Manufacturers* published in May 2003 proves that competitive market forces do

not afford protection to TPPs.³ A careful reading of the excerpt of the publication contained in footnote 11 of Attachment C shows that the publication applies to claims of manipulation of AWP by manufacturers interested in “increasing the amount the federal health care programs reimburse its customers.” There is nothing here that indicates that there are no market responses to inflation in AWP. One important lesson from the existence of Government intervention is that some TPPs may be more vulnerable than others. This lesson reinforces the conclusion that determination of impact from the alleged scheme requires individualized analyses.

H. Knowledge Of The Alleged Scheme (Att C, ¶¶14-20)

12. Dr. Hartman claims that PBMs did not know of the alleged scheme when it occurred and did not aggressively compete away the reimbursement impact when they found out. However, the details of the deposition testimony reveal contradictions of Dr. Hartman’s fundamental premise that there could not have been any market response for any potential class member for a period of over 3.5 years. The PBM deposition testimony that I cited shows that to varying degrees PBMs were aware of the changes in AWP/WAC markups and to varying degrees their client TPPs were in positions to obtain mitigating offsets. It is this variation in response that Dr. Hartman ignores.

13. The evidence from PBMs such as ESI directly contradicts Dr. Hartman’s fundamental premise. Nevertheless, for example, Dr. Hartman attempts to explain away ESI’s

3. It is interesting to note that the *OIG Compliance Program Guidance for Pharmaceutical Manufacturers* was published in the middle of Dr. Hartman’s class period. Under Dr. Hartman’s view the Government intervention was required to aid in creating “pricing transparency.” Yet Dr. Hartman does not build into his model any reduction in harm due to greater pricing transparency beginning in May 2003. Instead, his formulaic model runs through March 15, 2005 without any adjustments resulting from either market or governmental responses.

letter to clients, dated April 5, 2002, by stating, "I have seen no evidence that the letter was widely distributed." However, it is key to note that the letter does not need to be received by every TPP to create issues of individual impact that negate Dr. Hartman's presumptions of class-wide impact and formulaic damages.

14. Dr. Hartman criticizes (Att C, ¶20) my use of examples of four drugs that had noticeable increases in their AWP's. Dr. Hartman then concludes that only four drugs had noticeable increases in AWP. This is a wrong conclusion. The four drugs I employed in my report were just an example of a wider phenomenon. The point that I made in the first report, that the difference in AWP inflation during the class period was noticeable to a TPP that followed its drug trend, holds even when looking at all Appendix A drugs compared to the market as a whole. Using data from all of the Appendix A and non-Appendix A self-administered drugs, I show in Table A1 that NDC's, in the year of the 1.20 to 1.25 AWP/WAC ratio switch, experienced average annual AWP inflation increases of 9.8 to 16.5 percent during the 2001-2004 period. In contrast, overall AWP inflation for all drugs (Appendix A and non-Appendix A) was only around four to five percent per year in the four years preceding the alleged scheme and ranged from only 5.7 to 8.9 percent during the 2001-2004 period. It is difficult to believe that such inflation in AWP would go unnoticed by firms whose jobs include monitoring and reacting to levels of AWP.

I. Discount off AWP and Dispensing Fee (Att C, ¶¶21-8)

15. As I explained below in Section IV, Dr. Hartman cannot validly conclude that the alleged scheme had no impact on the discount off AWP and the dispensing fee from evidence that changes in those variables began before the class period. As I have shown, changes in those variables result from inflation in AWP. If the alleged scheme causes part of the inflation in AWP, then the alleged scheme causes some of the changes in discounts and dispensing fees. Importantly, if market responses occur to some degree, then Dr. Hartman's model is unreliable and biased in favor of plaintiffs. Dr. Hartman's assertion that changes in the discount off AWP and the dispensing fee have nothing to do with the alleged scheme results in an overstatement of damages and a presumed finding of impact for every TPP even if there were no impact on some or all TPPs.

16. Dr. Hartman uses my hypothetical examples to show that the alleged scheme could make TPPs better off. (Attachment C, ¶26). That is his presentation, not mine. I used the hypothetical example to demonstrate that under certain changes in discount and dispensing fee the TPP may suffer no impact from the alleged scheme. Dr. Hartman merely provides another numerical example of this result. These, however, are simply numerical examples designed to demonstrate the mechanics of Dr. Hartman's formulaic methodology. Determination of whether any TPP actually suffered harm is an empirical question that Dr. Hartman cannot address so long as he assumes that there can be no market responses to the alleged scheme (*e.g.*, changes in discount off AWP or dispensing fees as a result of the alleged scheme).

17. Dr. Hartman attempts to use the average changes in discount and dispensing fees to claim that my hypothetical changes in discount and dispensing fee are "exaggeratedly large." (Attachment C, ¶28) Dr. Hartman again is mischaracterizing my analysis. I proposed hypothetical changes in the discount and dispensing fee to show how the impact could be zero.

In reality, those variables along with a number of other variables can and do change in response to AWP inflation. Therefore, there can be complete mitigation of the alleged scheme even without large changes in the discount off AWP or the dispensing fee.⁴ The critical point is that Dr. Hartman's model does not allow for any changes in any variable other than the AWP/WAC ratio and therefore necessarily finds impact for each TPP when there may be none and overstates damages.

J. Other Contract Terms (Att C, ¶¶29-37)

18. Dr. Hartman applies to other contractual terms the same invalid arguments he uses to justify his assumption of no market responses to the alleged scheme in the discount off AWP and the dispensing fee. However, the question of whether these contractual terms for various TPPs are affected by the alleged scheme is an empirical question that Dr. Hartman has not addressed. Moreover, his formulaic damages methodology fails to allow or account for potential changes in these factors. The implication of my analysis is that determination of impact and damages requires analysis of the individualized TPP data. Dr. Hartman's methodology simply assumes no response in any variables or elements other than the AWP/WAC ratio, and thereby arbitrarily calculates maximal damages numbers, rather than assessing or estimating them. As a result, Dr. Hartman's methodology systematically overstates any damages and finds impact regardless of whether or not there is any.

K. Other Factors (Att C, ¶¶38-44)

4. As I showed in Section VI and Appendix E, modest changes discounts, dispensing fees and co-pays lead to complete mitigation when they occur simultaneously.

19. Dr. Hartman claims that his finding that WACs declined on 15 of 1,400 NDCs after implementation of the alleged scheme. Dr. Hartman misunderstands or mischaracterizes my analysis. The question is not whether WAC actually declined, but whether its level is lower than it would have been absent the alleged scheme. Dr. Hartman has done nothing to check whether this is the case and doing so requires a detailed econometric analysis. Yet Dr. Hartman has failed to provide a model or framework for conducting such an analysis.

20. Dr. Hartman also criticizes my analysis of the impact of market responses to the alleged scheme on non-Appendix A drugs. Dr. Hartman's criticism is incorrect for two reasons.

21. First, Dr. Hartman does not refute my empirical finding the dollar value of non-Appendix A drugs is roughly equal to the dollar value of Appendix A drugs (See January Willig Report, Table 1). Second, Dr. Hartman fails to recognize the critical point that any market response applies to both Appendix A and non-Appendix A drugs, creating an offset that his formulaic methodology necessarily misses. His only response to this finding is a repetition of his denial that there can be any market response to the AWP inflation caused by the alleged scheme.

Table A1
Average WAC and AWP Changes by Year
Weighted by McKesson Sales
1997 - 2004

	1997	1998	1999	2000	2001	2002	2003	2004
NDCs with Ratio Changes from 1.20 to 1.25								
Number of NDCs					56	997	230	77
Weight: Sales in Millions								
Percentage Increase in AWP					9.83	11.53	11.35	16.52
Percentage Increase in WAC					5.39	7.10	6.89	11.86
All NDCs								
Number of NDCs	5,661	6,055	6,738	7,552	8,522	9,419	10,409	11,470
Weight: Sales in Millions								
Percentage Increase in AWP	4.45	4.79	5.45	5.05	5.67	8.90	7.04	5.02
Percentage Increase in WAC	4.57	4.68	5.44	4.11	5.36	6.74	6.85	4.99

Source: First DataBank data (AWP and WAC); Total McKesson sales from August 2001 through May 2005.

APPENDIX B

Appendix B: Documents Relied Upon

1. AZ0468041 – AZ0468091 : “Price Action Recommendation.” November 19, 2002.
2. AZ0468027 – AZ0468040.
3. CMK-AWP 013102-76
4. CMK-AWP 013177-90
5. CMK-AWP 13208-31
6. CMK-AWP 013201-7
7. CMK-AWP012850-3
8. CMK-AWP012815-37
9. CMK-AWP011559-76
10. CMK-AWP011582-95
11. CMK-AWP011526-43
12. CMK-AWP011499-525
13. CMK-AWP012857-75.
14. Deposition of Tina Wong, BCBS of Montana, November 14, 2006.
15. Deposition of Eric Cannon, Select Health, October 11, 2006.
16. Deposition of William Fleming, Humana, November 9, 2006.
17. Deposition of David Charles Silko, McKesson, April 13, 2007.
18. Deposition of James W. Buckley, Jr., New England Carpenters, October 20, 2006 and November 7, 2006.
19. Deposition of Rosaria Esperon, DC37, November 6, 2006.
20. Deposition of Susan Hayes, October 26, 2006.

21. Deposition of Einhorn, February 25, 2004.
22. Deposition of Andrea Grande, Harvard Pilgrim, October 11, 2006.
23. Deposition of James Kenney, Harvard Pilgrim, October 11, 2006.
24. Deposition of Arthur Steinberg, Teachers, October 18, 2006.
25. Deposition of Matthew Gibbs, Hewitt Associates, October 27, 2006.
26. Deposition of Donny Dowlen, Southern Benefit Administrators on behalf of Pirelli Tires, October 19, 2006.
27. Deposition of David Joyner, Caremark, September 23, 2004.
28. Deposition of Albert Thigpen, Caremark, August 27, 2004.
29. Deposition of Carol Sidwell, John Deere Health, September 17, 2004.
30. Deposition of Geoffrey Kilgore, Caremark, August 16, 2005.
31. Declaration of William J. Einhorn of the Teamsters, March 15, 2007.
32. Declaration of Gregory Madsen, Caremark, December 18, 2006.
33. Declaration of Steven J. Young in the AWP MDL, October 25, 2004.
34. Declaration of Earl Seymour in Support of Plaintiff's Reply Brief in Support of Their Motion for Class Certification, March 19, 2007.
35. Declaration of Rosaria Esperson, Administrator of the Health and Security Plan of District Counsel 37, in Support of Plaintiffs' Motion for Class Certification, March 19, 2007.
36. Declaration of James W. Buckley, Director of the New England Carpenters Health Benefit Fund, in Support of Plaintiffs' Motion for Class Certification, March 19, 2007.
37. Declaration of Arthur Steinberg, Administrator of the Philadelphia Federation of Teachers Health and Welfare Fund, in Support of Plaintiffs' Motion for Class Certification, March 15, 2007.
38. Young Exhibit 12.
39. ESI-414-00001753-4 :
E-mail from Heather Sundar to Ryan Soderstrom, Julie Lynch, Raulo Frear,

Everette Neville, Nancy Gilbride, Mark Hughes, Ed Ignaczak, Sue Sommer, Beth Wingate, Marc Palmer, and Stuart Bascomb, dated April 5, 2002.

40. ESI-414-00001760
Email from Chris Macinski to Stuart L. Bascomb and Beth Wingate, March 22, 2002.
41. ESI-414-00001794
E-mail from Everette Neville to Stuart L. Bascomb, Sue Sommer and Pamela Roberts, March 19, 2002.
42. ESI-414-00003677-8.
43. ESI 277 00009398-480
44. HP/NEC 0988 - HP/NEC 1070
45. HUM0001 and HUM00021.
46. MHS A_0004999-5017.
47. MHS A_0005018.
48. MHS A_0003767-93.
49. MHS A_0003794
50. MHS A_0003795-9
51. MHS A_0003837-924
52. MHS A_0003829-32
53. MHS A_0005160-72
54. MHS A_0005173-5
55. MHS A_0005177-85
56. MHS A_0005138-52
57. MHS A_0005153-9
58. MHS A_0002575-661
59. MHS A_0002703-39

60. MHS A_0002740-3
61. MHS A_0002744-5
62. Express Scripts 1999 Drug Trend Report, Express Scripts 2000 Drug Trend Report, Express Scripts 2001 Drug Trend Report, Express Scripts 2002 Drug Trend Report, Express Scripts 2003 Drug Trend Report, Express Scripts 2004 Drug Trend Report.
63. http://www.express-scripts.com/our_company/news/industry_reports
64. Report of Independent Expert Professor Ernst R. Berndt to Judge Patti B. Saris, February 9, 2005 - In Re Pharmaceutical Industry Average Wholesale Price Litigation, MDL No. 1456.
65. Prescription Drug Benefit Cost and Plan Design Survey Report, PBMI, 2005.
66. The Employer Health Benefits 2006 Annual Survey.
67. May 1, 2001 contract between the Pirelli Armstrong Tire Corporation and AdvancePCS, L.P.
68. January 1, 1999 through December 31, 2001 contract between the California Public Employees' Retirement System and Merck-Medco Managed Care, L.L.C.
69. John Deere Health Care, Inc.'s April 1, 2004 contract with Walgreen Co.
70. Robert S. Pindyck and Daniel L. Rubinfeld, *Econometric Model & Economic Forecasts*, 2nd Edition, 1981.
71. William H. Greene, *Econometric Analysis*, 5th edition.
72. Luis Cabral, *Introduction to Industrial Organization*, 2000.
73. Tim Bresnahan "Empirical Studies of Industries with Market Power," in *Handbook of Industrial Organization*, Volume 2., 1989.
74. Bradford J. Holmes, "Employers Step Up The Battle On Drugs Costs", WholeView TechStrategy Research Brief, Forrester Research, Inc., September 23, 2002.
75. <http://connecticare.com/GlobalFiles/AboutCCI/press/corporatefacts.aspx>, accessed April 24, 2007.
76. SBC Communications, Inc., 10-K fiscal year ended December 31, 2004.

77. FDB Data.

78. McKesson Sales Data.

APPENDIX C

Appendix C: Regression Estimation

A. Data Preparation

1. The regression analysis that I presented in Section IV of this declaration uses publicly available data on average discounts, dispensing fees and ingredient costs from the 2005 Prescription Drug Benefit Cost and Plan Design Survey Report ("PBMI Report"), AWP inflation from the Express Scripts Drug Trend Reports from 1999 through 2005 ("ESI Drug Trend Reports") and WAC inflation data from FDB prices and McKesson sales.

2. Data for average discounts and average dispensing fees for retail and mail order prescriptions come from the PBMI report, and are the same data included in Table 2 of the January Willig Report and used in the regression in the March Hartman Declaration. These data are listed in columns one through four of Table C1. Average inflation for branded drugs is reported in the ESI Drug Trend Reports starting in 1999 through 2005. The inflation rates for 1998 through 2004 are listed in column five of Table C1. Data for WAC inflation comes from Table A1, which calculates weighted price increases for the WAC variable reported by FDB for Appendix A and a group of comparison drugs. The weights used are McKesson annual sales during the class period. The WAC inflation rate is listed in column six of Table C1.

Table C1: Publicly Available Data Used in Regression Analysis

Year	Average Discount off AWP Retail [1]	Average Dispensing Fee Retail [2]	Average Discount off AWP Mail [3]	Average Dispensing Fee Mail [4]	Average AWP Inflation [5]	Average WAC Inflation [6]
1997	12.6%	\$2.32	16.6%	\$1.61		
1998	13.2%	\$2.35	17.1%	\$1.51	5.8%	4.68%
1999	13.1%	\$2.30	17.4%	\$1.38	5.4%	5.44%
2000	13.5%	\$2.31	18.5%	\$1.15	5.8%	4.11%
2001	13.9%	\$2.21	18.9%	\$1.09	8.4%	5.36%
2002	14.1%	\$2.13	19.7%	\$0.86	7.6%	6.74%
2003	14.5%	\$2.05	20.4%	\$0.52	7.2%	6.85%
2004	14.8%	\$1.95	21.0%	\$0.41	7.2%	4.99%

3. I used the data on average AWP inflation and average WAC inflation to create an AWP index and a WAC index that start with values of 100 in 1997 and increase according to the ESI Drug Trend Report inflation rates (Table C1, column 5) for the AWP index and according to FDB WAC inflation (Table C1, column 6) for the WAC index. I use these indices as my measures of AWP and WAC in the regression models.¹ The AWP index and WAC index give levels of AWP and WAC in each year that I use in my regression models. These indices are listed in Table C2.

4. I also use the AWP inflation index to create a time series of average ingredient cost for mail order and retail prescriptions. I do this by starting with the

1. The AWP index actually gives the true average AWP over time some constant multiple $c \cdot \text{AWP}$. The relevant term for the regression is the natural log of this, $\ln(c) + \ln(\text{AWP})$, which means that the constant term c simply becomes part of the constant term in the regression. The same is true for the WAC index.

average ingredient cost given in the PBMI report for 1997 and increasing that ingredient cost by the inflation rate in Table C1 from the ESI Drug Trend Reports. The values for average ingredient cost are given in columns five and six of Table C2.

5. Finally, I use the average discounts, dispensing fees, and ingredient cost to create the average payment percentage, which is the average percentage of AWP that is jointly paid by a TPP and its members (through co-pays). Therefore, this also gives the average percentage of AWP that the pharmacy receives for a prescription from the TPP payments and member co-pays combined. The formula for average payment percentage is:

$$\text{Average Payment Percentage} = (1 - \text{Discount}) + (\text{Dispensing Fee} / \text{Ingredient Cost}).$$

The average payment percentage is given in columns seven and eight of Table C2.

Combining discounts and dispensing fees in this way allows me to estimate the impact of AWP inflation on average payment percentages, taking into account both discounts and dispensing fees.

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Table C2: AWP Index and Average Ingredient Costs

Year	Average AWP Inflation [1]	AWP Inflation Index [2]	Average WAC Inflation [3]	WAC Inflation Index [4]	Average Ingredient Cost Retail [5]	Average Ingredient Cost Mail [6]	Average Reimb. Retail [7]	Average Reimb. Mail [8]
1997		100.0		100.0	\$39.68	\$132.25	93.2%	84.6%
1998	5.8%	105.8	4.68%	104.68	\$41.98	\$139.92	92.4%	84.0%
1999	5.4%	111.5	5.44%	110.37	\$44.24	\$147.46	92.1%	83.5%
2000	5.8%	118.0	4.11%	114.91	\$46.82	\$156.06	91.4%	82.2%
2001	8.4%	127.9	5.36%	121.07	\$50.75	\$169.15	90.5%	81.7%
2002	7.6%	137.6	6.74%	129.23	\$54.60	\$181.98	89.8%	80.8%
2003	7.2%	147.5	6.85%	138.08	\$58.53	\$195.07	89.0%	79.9%
2004	7.2%	158.1	4.99%	144.97	\$62.73	\$209.09	88.3%	79.2%

B. Estimation of Trend and AWP Regressions

6. The relevant term for market participants is the amount they pay in dollars, given by $AWP \times \text{Average Payment Percentage}$. Because AWP and average payment percentage enter this equation multiplicatively, the appropriate econometric specification to evaluate whether changes in the average payment percentage offset (in part or in whole) change in AWP is log-linear.

7. The regression analysis Dr. Hartman conducts in the March Hartman Declaration estimates separate regressions for the impact of a simple trend on the average discount rate and the average dispensing fee, respectively. Dr. Hartman hypothesizes that time is the sole driver of changes in the average payment percentage. Using a specification, which combines the effect of discounts and dispensing fees and estimates

mail order and retail together, the corresponding regression of average payment percentage on a time trend is:

$$\text{Model 1: } \log(\text{AverageReimbursement}) = \alpha + \gamma * \text{Trend} + \lambda * \text{Mail} + \varepsilon$$

The variable Mail is equal to one for all observations for mail order prescriptions and equal to zero for all retail observations. Trend is a variable that has a value of one in 1997 and increases by one each year to a value of eight in 2004. The results of this regression are given in Table C3. In this model, trend is negative and highly significant, so this model does show that the average effective discount falls over time. The actual and predicted relationship between average payment percentage and time is shown in Figure 1.

Table C3: Regression Results for Model 1,
Dependent Variable: Ln(Average Payment Percentage)

Variable	Parameter Estimate	t-Value
Intercept	-0.0567	-28.84
Trend	-0.0088	-24.80
Mail	-0.1026	-63.18
N = 16		
Adj. R ² = 0.9972		
AIC = -180.68		

8. The alternative specification is to use the natural logarithm of AWP rather than time trend as the explanatory variable in the regression. Model 2 does this.

$$\text{Model 2: } \log(\text{AveragePaymentPercentage}) = \alpha + \beta * \log(\text{AWPIndex}) + \lambda * \text{Mail} + \epsilon$$

The values of average payment percentage and AWP index are equal to the values in Table C2. The Mail variable is the same as in the first model. The results of this regression are given in Table C4. The ln AWP index variable is highly significant and negative, which means that as the level of AWP inflation increases, the average payment percentage falls. Therefore, as the level of AWP inflation increases, the market responds with higher discounts and/or lower dispensing fees that decrease the average payment percentage faced by the TPP/member.

Table C4: Regression Results for Model 2,
Dependent Variable: Ln(Average Payment Percentage)

Variable	Parameter Estimate	t-Value
Intercept	0.5413	22.57
Ln(AWP Index)	-0.1322	-26.60
Mail	-0.1026	-67.68
N = 16		
Adj. R ² = 0.9975		
AIC = -182.88		

However, a test to compare the model with time (Model 1) and the model with AWP (Model 2), using the Akaike Information Criterion ("AIC"), shows that the model using

AWP is preferred over the model using only time.² The actual and predicted relationship between average payment percentage and the AWP index is shown in Figure 2.

9. The only other question to test is whether both AWP index and trend should be used together in one model to predict changes in the average payment percentages. AWP index and time are, in econometric terms, highly correlated. This means these variables tend to move in sync with one another. Therefore, if movement in either of the variables affects the average payment percentage, then movement in the other variable is also likely to be correlated with the average payment percentage as well, and thus to be statistically significant in a regression.

10. The trick for the econometrician is to determine which variable is the better predictor of the dependent variable, in this case, average payment percentage. Put differently, we can compare three models – one with only time (Model 1), the one with only the AWP index (Model 2), and a new Model 3 with both. Therefore, Model 3 is:

$$\log(\text{AverageReimbursement}) = \alpha + \beta * \log(\text{AWPIndex}) + \gamma * \text{Trend} + \lambda * \text{Mail} + \varepsilon$$

The results of this estimation are in Table C5.

2. See William H. Greene, *Econometric Analysis*, 5th edition, pp. 159-60. Since both models have the same number of explanatory variables, the AIC in this case simply compares the R^2 from the two regressions, to see which better explains changes in the average payment percentage.

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Table C5: Regression Results for Model 3,
Dependent Variable: Ln(Average Payment Percentage)

Variable	Parameter Estimate	t-Value
Intercept	0.4312	1.21
Ln(AWP Index)	-0.1078	-1.37
Trend	-0.0016	-0.31
Mail	-0.1026	-65.29
N = 16		
Adj. R ² = 0.9976		
AIC = -181.011		

11. As expected, neither AWP index nor trend are as significant when they are both included in the regression because they are too highly correlated. However, we know from the simple regressions (Models 1 and 2) that both time and AWP are highly correlated with the average payment percentage. So, our question boils down to this – is average payment percentage best explained by a model with just time (Model 1), a model with just AWP (Model 2), or a model with both time and AWP (Model 3)? As above, the AIC provides a standard method to compare the models, with the lowest AIC preferred. As the results show, the model with only AWP is preferred, which indicates that the changing average payment percentage is actually best explained by AWP, and that once AWP is accounted for, adding a time trend adds no value to the model. Put simply, AWP index is the better predictor of average reimbursements.

C. Estimation of WAC Regressions

12. A test of Dr. Hartman's theory that average payment percentage reacts to general inflation but not to inflation caused by the alleged scheme would be to compare

models predicting average payment percentage using an AWP index to a model predicting average payment percentage using a WAC index. The WAC index is a measure of the general inflation that occurs because the cost of drugs to the pharmacies increases. The AWP index will capture this general inflation and also any AWP inflation caused by the alleged scheme. The regression using AWP inflation is Model 2 detailed above in Table C4. The model for the WAC regressions is similar to the regressions discussed above. Model 4 is:

$$\log(\text{AverageReimbursement}) = \alpha + \beta * \log(\text{WACIndex}) + \lambda * \text{Mail} + \varepsilon$$

The results of this regression are given in Table C6.

Table C6: Regression Results for Model 4, Dependent Variable: Ln(Average Payment Percentage)		
Variable	Parameter Estimate	t-Value
Intercept	0.6849	21.92
Ln(WAC Index)	-0.1633	-25.01
Mail	-0.1026	-63.72
N = 16		
Adj. R ² = 0.9972		
AIC = -180.952		

13. This regression shows that WAC has a significant and negative impact on average payment percentage. This suggests TPPs respond to increases in general inflation. Like the trend variable used above, the WAC index is correlated with AWP

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index, so we can conduct the same three model comparison. In this case the comparison is between the AWP regression (Model 2), the WAC regression (Model 4) and a model that includes both AWP and WAC (Model 5). Model 5 is:

$$\log(\text{AverageReimbursement}) = \alpha + \beta * \log(\text{AWPIndex}) + \gamma * \log(\text{WACIndex}) + \lambda * \text{Mail} + \varepsilon$$

The results of this regression are detailed in Table C7.

Table C7: Regression Results for Model 5,
Dependent Variable: Ln(Average Payment Percentage)

Variable	Parameter Estimate	t-Value
Intercept	0.5283	4.08
Ln(AWP Index)	-0.1440	-1.25
Ln(WAC Index)	0.0147	0.10
Mail	-0.1026	-65.06
N = 16		
Adj. R ² = 0.9976		
AIC = -180.90		

14. Again, using the standard AIC method values for these three models, the model with only AWP is preferred, which suggests that TPPs respond to AWP inflation, which includes any inflation caused by the alleged scheme.

APPENDIX D

Appendix D: Analysis of Dr. Hartman's Formulaic Methodology**A. The Damages Formula Assumes Zero Market Response**

1. The starting point of Dr. Hartman's formulaic methodology is his assumed formula for net reimbursement (AA).

$$AA^{pre} = (1 - d) * AWP^{pre} + df$$

$$AA^{post} = (1 - d) * AWP^{post} + df$$

2. Using the zero market response assumption, Dr. Hartman derives a simple formula for impact and damages. Derivation of Dr. Hartman's formula is as follows:

$$\begin{aligned} \text{Damages} &= \Delta AA * Q = (AA^{post} - AA^{pre}) * Q \\ &= [(1 - d) * AWP^{post} + df - (1 - d) * AWP^{pre} - df] * Q \end{aligned}$$

Notice that the additive term df disappears and the multiplicative term (1 - d) applies to both AWP^{pre} and AWP^{post} .

$$\text{Damages} = (1 - d) * (AWP^{post} - AWP^{pre}) * Q$$

Due to the alleged scheme there is a relationship between AWP^{post} and AWP^{pre} .

$$AWP^{post} = 1.25 * WAC \text{ and } AWP^{pre} = 1.2 * WAC$$

Therefore,

$$\text{Damages} = (1 - d) * (1.25 - 1.2) * WAC * Q$$

or

$$\text{Damages} = (1 - d) * 0.05 * WAC * Q$$

3. Now suppose the discount of AWP (d) and the dispensing fee (df) change as a result of the alleged scheme.¹ Dr. Hartman's set up of the damages formula now changes because the discount observed in the actual world (d^{post}) and the discount that would have been observed but for the alleged scheme (d^{pre}) differ. Similarly, there is now a difference between the actual dispensing fee (df^{post}) and the dispensing fee that would have existed but for the alleged scheme (df^{pre}).²

$$AA^{pre} = (1 - d^{pre}) * AWP^{pre} + df^{pre}$$

$$AA^{post} = (1 - d^{post}) * AWP^{post} + df^{post}$$

4. The modified formulas for the net reimbursement pre-scheme and post-scheme (AA^{pre} and AA^{post}) now use different values for the discount (d^{pre} and d^{post}) and different values for the dispensing fee (df^{pre} and df^{post}) in recognition of the possibility for each class member that those variables may have been affected to some degree by the alleged scheme.

Accordingly, the modified damages formula is as follows.

$$\text{Damages} = \Delta AA * Q = (AA^{post} - AA^{pre}) * Q$$

$$\text{Damages} = [(1 - d^{post}) * AWP^{post} + df^{post} - (1 - d^{pre}) * AWP^{pre} - df^{pre}] * Q$$

Dr. Hartman's simple formulaic methodology is no longer so simple.

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1. This illustration of the impact on Dr. Hartman's formulaic methodology uses changes in the discount off AWP and the dispensing fee as an example. Dr. Hartman's formulaic methodology fails if any of the various market responses outlined in the January Willig Report and in Section III of this declaration occur as a result of the alleged scheme, not just the discount and the dispensing fee.
 2. Following Dr. Hartman's naming convention, I use the superscript "post" to denote the actual observed values of the variables AWP, d and df , while using the superscript "pre" to denote the "but-for" values of the variables AWP, d and df .

B. Numerical Example Of Dr. Hartman's Overstatement Of Impact And Damages

5. As I discussed in the January Willig Report, Dr. Hartman's methodology does not allow for market responses that can occur during the contract period and that may result in an "overshooting" whereby the net impact for a TPP may be zero or negative.³ In the March Hartman Report, Attachment C, Dr. Hartman attempts to show that using actual data on changes in discount and dispensing fee, there is still impact from the alleged scheme. The problem is that he ignores data on other market responses such as increases in co-pays and offsets from application of the changing parameters to non-Appendix A drugs. Dr. Hartman's problem is best demonstrated using Dr. Hartman's data. In Table L.B. he uses the following values for discounts, dispensing fees and AWP for retail pharmacies:

$$d^{pre} = 13.9\%, df^{pre} = \$2.21, AWP^{pre} = \$96$$

$$d^{post} = 14.5\%, df^{post} = \$2.04, AWP^{post} = \$100$$

Under Dr. Hartman's analysis the reimbursements prior to the alleged scheme are \$84.87 and the reimbursements increase to \$87.54 after the alleged scheme.

$$AA^{pre} = (1 - 0.139) * \$96 + \$2.21 = \$84.87$$

$$AA^{post} = (1 - 0.145) * \$100 + \$2.04 = \$87.54$$

Thus Dr. Hartman finds damages of $AA^{post} - AA^{pre} = \$87.54 - \$84.87 = \$2.67$. I have a number of useful observations here.

6. First, it is important to note that this is not Dr. Hartman's damages model. Dr. Hartman's damages model assumed no change in d and df between when calculating AA^{pre} and AA^{post} , even in cases where those parameters have changed. Therefore, Dr. Hartman has shown that his damages model would necessarily generate an overstatement of damages. He

3. January Willig Report, ¶¶ 115-117.

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assumes that d and df are “constant” at the levels of $d = 14.5\%$ and $df = \$2.04$. Therefore, Dr. Hartman’s model would generate a damages measure of \$3.42 even if the true figure was \$2.67.

$$AA^{pre} = (1 - 0.145) * \$96 + \$2.04 = \$84.12$$

$$AA^{post} = (1 - 0.145) * \$100 + \$2.04 = \$87.54$$

$$AA^{post} - AA^{pre} = \$3.42$$

7. Second, Dr. Hartman has ignored changes in other parameters affecting net reimbursement payments for TPPs. Suppose due to the alleged scheme co-pays increased from \$17 to \$18.⁴

$$AA^{pre} = (1 - 0.139) * \$96 + \$2.21 - \$17 = \$67.87$$

$$AA^{post} = (1 - 0.145) * \$100 + \$2.04 - \$18 = \$69.54$$

In Dr. Hartman’s example, damages would drop to $AA^{post} - AA^{pre} = \$1.67$.

8. Third, Dr. Hartman has ignored the impact of changing parameters on non-Appendix A drugs. Suppose approximately half of the drug volume for a TPP consists of non-Appendix A drugs. For non-Appendix A drugs the change in reimbursement from the alleged scheme would be the following.

$$AA^{pre} = (1 - 0.139) * \$96 + \$2.21 - \$17 = \$67.87$$

$$AA^{post} = (1 - 0.145) * \$96 + \$2.04 - \$18 = \$66.12$$

The damage then for each non-Appendix A drug then would -\$1.75, or an offset of \$1.75. The net impact of the alleged scheme over both Appendix A and non-Appendix A drugs would be -\$0.08.

4. The Employer Health Benefits 2006 Annual Survey published by The Kaiser Family Foundation Health Research and Education Trust reported that member co-pays increased from \$17 to \$19 from 2002 to 2003. See, January Willig Report, Table 5. I used a conservative change from \$17 to only \$18 in the example here.

9. This numerical example demonstrates that under actual measures of the changes in the parameters d , df and co-pay, Dr. Hartman's numerical example shows no impact. Yet Dr. Hartman's damages model in this circumstance would show impact of \$3.42. This is a demonstration of how Dr. Hartman's formulaic methodology generates impact even when there is none for a particular TPP and generates an upwardly biased estimate of damages for TPPs who have been harmed.